IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY

INTEGRATED SAFETY MANAGEMENT SYSTEM PHASE II VERIFICATION

FINAL REPORT
Volume II

September 1999

U.S. Department of Energy
Washington, D.C.

Sub-Team: ATR	**FUNCTIONAL AREA: DOE** **DATE**: September 15, 1999

OBJECTIVE: DOE.1 DOE procedures and mechanisms are established to help ensure that hazards are analyzed; controls are developed; work is formally and appropriately authorized and performed safely; and feedback and improvement programs are in place and effective. DOE line managers are using these processes effectively, consistent with FRAM and FRA requirements, and are involved in the review of safety issues and concerns and have an active role in authorizing and approving work and operations. (CE II-7, CE II-8)

Criteria

1. DOE procedures and/or mechanisms are in place that establish a process for confirming readiness and authorizing operations.

2. DOE procedures and/or mechanisms are established to help ensure that the safety management system is properly implemented and line management oversight of the contractor's worker, public, environment, and facility protection programs is performed.

3. DOE procedures and/or mechanisms require day-to-day operational oversight of contractor activities through Facility Representatives.

4. DOE procedures and/or mechanisms are established to help ensure the implementation of quality assurance programs and ensure that contractors implement quality assurance programs.

5. DOE procedures and/or mechanisms are in place to help ensure that the contractor's hazard analysis covers the hazards associated with the work and is sufficient for selecting standards.

6. DOE procedures and/or mechanisms are in place in which DOE directs the contractor to propose facility or activity-specific standards tailored to the work and the hazards. DOE procedures require that appropriate safety requirements in necessary functional areas are included in contracts.

7. DOE procedures and/or mechanisms are in place that direct DOE line manager oversight to ensure that implementation of hazards mitigation programs and controls are established.

8. DOE procedures and/or mechanisms are in place that direct the preparation of the authorization basis documentation and oversee the implementation by the contractor. Procedures for development, review, approval, maintenance, and utilization of Authorization Agreements are implemented.

9. DOE procedures and/or mechanisms require that contractors develop a lessons-learned program and monitor its implementation. A process is established for reviewing occurrence reports and approving proposed corrective action reports. A DOE process is established and effectively implemented to continuously improve efficiency and quality of operations. Corrective actions are developed, implemented, and tracked in order to profit from prior experience and the lessons learned. DOE provides effective line oversight of the contractor's self-assessment programs.

Approach

NOTE: In general, ID direction to the contractor to carry out DOE requirements is through List A and List B of contract DE-AC07-94ID13223, including associated contract modifications. Review of contract DE-AC07-94ID13223 should provide proof that ID has directed the contractor to implement many of the criteria stated above. Additionally, ID has written an ID ISMS Description Document, ID Guide 450.X-X, which explains the DOE-ID ISMS. Review of ID Guide 450.X-X should provide information on how ID implements its ISM system, and how ID activities integrate with those of LMITCO. The following Record Review section highlights specific ID Notices tailored to the criteria above.

Record Review: Review ID Notice 411.1, "DOE Integrated Safety Management Functions, Responsibilities and Authorities" to verify that line management is responsible for safety, and that their responsibility is clearly defined in roles and responsibilities. Review ID Notice 425.1, "Startup and Restart of Nuclear Facilities" to determine if a process for confirming readiness and authorizing operations is in place, and review documentation from a startup or restart review to determine the adequacy of implementation. Review ID Notice 450.A3,"Environment, Safety, Health and Quality Assurance Oversight" and ID Order 220.X, "Independent Assessment" and sample select surveillance reports to determine if mechanisms are established to help ensure line management performs oversight of the contractor's ISMS, (specifically including hazard mitigation programs and controls, and self-assessment programs) to verify protection of workers, public, and the environment. Review the Quarterly Oversight Schedule to determine if the oversight is balanced with risk and priority of mission. Review Facility Representative Position Descriptions and Performance Agreements to determine if mechanisms are in place to require day to day operational oversight by FRs. Review ID Order 414.1, "Quality Assurance Program" and individual ID AM organization Quality Program Plans (QPPs) to determine if they help ensure the implementation of quality assurance program by ID and LMITCO. Review ID Notice 420.A1, "Safety Basis Review and Approval Process" to determine if this mechanism directs the preparation of authorization basis documentation, helps ensure that the contractor's hazard analysis covers the hazards associated with the work, and is sufficient for directing the selection of standards tailored to the facility work and hazards. Review ID Notice 450.C, "Authorization Agreements" to determine if it is sufficient to direct the development, review, approval, maintenance and utilization of Authorization Agreements. Review facility Authorization Agreement(s) to determine if ID Notice 450.C was properly implemented. Review the approved and in process facility hazards analysis documentation to verify that contractor procedures and mechanisms have been properly reviewed and approved. Review ID Order 210.X, "DOE-ID Performance Measure, Trend Analysis, and Communications" to

determine if this mechanism requires contractors to develop a lessons-learned program and monitor its implementation. Review ID Order 410.A, "DOE-ID Issue Management" to determine if ID has a process to ensure corrective actions are developed, implemented, and tracked. Review the results of the implementation of ID Order 410.A to evaluate adequacy of implementation to continuously improve efficiency and quality of operations. Review ID O 220.X, "DOE-ID Self Assessment" to determine the adequacy of the ID management self-assessment program.

Interviews: Interview the Facility Director and Site Area Director and discuss work authorization and performance to determine if there are adequate mechanisms to ensure that work is properly authorized at all levels. Determine if worker safety is perceived as an integral part of the work authorization process and that workers are involved in issue resolution if appropriate. Interview DOE and Contractor Line Management personnel at all levels and discuss the oversight programs. Discuss the Facility Representative (FR) programs with facility representatives and contractor personnel to determine if the FR program is effective. Discuss oversight and assessment programs with DOE staff from the Facility, Operational Safety Division, Environmental Programs and Settlement Agreement Division, and the Performance Assurance Division who perform ES&H management and supervision assignments. During interviews, verify understanding of line management responsibility for safety and understanding of clear roles and responsibilities. Interview Facility Director, Facility Engineer(s), and Operational Safety Division Director to discuss the review and approval of the results of the contractor's identification, analysis, and categorization of hazards to assess their understanding of the procedures and the underlying principles and requirements. Interview Facility Director, Facility Engineer(s), and Operational Safety Division Director to discuss the review and approval of the standard selection process including the approval of the authorization protocols and agreements. Interview DOE personnel responsible for administering the issues management program and those DOE line managers who provide oversight of the contractor's self-assessment programs. Interview DOE-ID management personnel responsible for the DOE-ID management self-assessment program.

Observations: Observe selected facility representative and DOE staff oversight activities. Observe conformance to ID N 450.A3,"Environment, Safety, Health and Quality Assurance Oversight." Observe the review of Occurrence Reports by Facility Representatives to assess conformance to DOE Order 232.1, "Occurrence Reporting and Processing of Operations Information." Observe the weekly Facility Director Conference Call, Facility Director staff meetings, and interface with the contractor (e.g. performance monitor meetings) to determine line management understanding and awareness of operational activities.

Record Review

- DE-AC07-94ID13223 List A (6/17/99) and List B (5/25/99), INEEL Contract for LMITCO
- DOE ID Guide G 450.E-1, ID ISMS Description Guide, Rev 0, 8/4/99
- DOE ID Notice 411.1, DOE Integrated Safety Management Functions, Responsibilities, and Authorities, 2/8/99
- DOE ID Notice 425.1, Startup and Restart of Nuclear Facilities, 11/10/97

- DOE ID TRA Documentation for the April 1999 ATR Startup/Restart, 4/99
- DOE ID Notice 450.A3, Environment, Safety, Health, and Quality Assurance Oversight, 5/10/99
- DOE ID Order 220.B, Independent Assessment, 9/10/99
- Reports of the DOE ID Surveillance and Self-Assessment Reports for the TRA for the last year that pertain to ATR/ATRC/NMIS including hazard analysis, mitigation and controls, the performance of operations and maintenance, etc. (series), 1998-1999
- DOE ID TRA Quarterly Oversight Schedules for ATR for current, previous, and future quarter, 1999
- DOE ID TRA Facility Representative (FR) Position Descriptions and Performance Agreements for the DOE FRs assigned to ATR and TRA, 11/98
- DOE ID Order 414.1, Quality Assurance Program, 7/26/99
- DOD ID OPEM 410.C-1, DOE ID OPE Operational Excellence Manual, 4/7/99
- DOE ID AM Organization Quality Program Plan (QPP) for the ATR, 7/26/99
- DOE ID Notice 420.A1, Safety Basis Review and Approval Process, 5/11/98
- DOE ID TRA Documentation for ATR from ID Notice 420.A1, 1998-1999
- DOE ID Notice 450.C, Authorization Agreements, 2/8/99
- DOE ID TRA, IAG-31, Rev 1, ATR Authorization Agreement 4/20/99
- DOE ID TRA Documentation re approval and implementation of the ATR Facility Hazards, including Technical Safety Requirements (TSR) Changes, and ATR SAR Annual Update, 1998-July 1999
- DOE ID Order 210.A, DOE-ID Performance Measures, Trend Analysis, and Communications, 8/27/99
- DOE ID TRA Documentation for implementing ID Order 210.A at TRA, 7/8/99
- DOE ID Order 410.A, DOE-ID Issue Management, 5/10/99
- DOE ID Manual, ID M-410.A-1, Rev 0, Issue Management Manual, 5/10/99
- DOE ID TRA Documentation for implementing ID Order 410.A at TRA, 6/9/99
- DOE ID Order O 220.A, DOE-ID Self-Assessment, 8/20/99
- DOE ID TRA Documentation for implementing ID Order O 220.A at TRA, 7/9/99
- DOE ID TRA Documentation for implementation of DOE Order 232.1 at TRA, 1998-1999
- DOE ID TRA Occurrence Reporting and Processing of Operations (ORPS) Reports and Information, 1998-1999
- DOE ID Order 120.A1, General Business Planning, 8/19/99
- DOE ID Notice 251.1B, ID Directives System, 5/10/99
- DOE ID Order 450.A, Line Environmental, Safety and Health (ES&H) Oversight, 8/27/99
- DOE ID 450.B, Imminent Danger Response Action and Stop Work, 6/16/97
- DOE ID TRA ATR Safety Evaluation Report (SER), 2/20/98
- DOE ID ID-10671, INEEL/EX-98-01172, Rev 3, INEEL CO2 Accident Corrective Action Implementation Plan Report, 6/99
- DOE ID TRA ATR Detailed Activity Reports (ESH-1999 (series)) for TRA and ATR for 1999 including Self-Assessments, 1999
- DOE ID Notice ID N 440.A, DOE ID Federal Employees Occupational Safety and Health Handbook, 11/10/96
- DOE ID ISMS Phase II Plan of the Week Status Schedule, 8/23/99

- DOE ID TRA / LMITCO Reactor Programs, Rev 0, Nuclear Reactor Products and Operations Program Plan, 9/7/99

Interviews Conducted

- DOE ID TRA Facility Director (FD)
- DOE ID TRA Deputy Facility Director
- ATR Site Area Director (SAD)
- ATR Issues Management Manager
- ATR Facility Manager (FM)
- ATR Deputy Facility Manager
- ATR Operations Manager
- ATRC Facility Manager
- ATRC Facility Operations Manager
- NMIS Facility Operations Manager
- NMIS Facility Operations Supervisor
- DOE ID Assistant Manager for Office of Program Execution (OPE)
- DOE ID Deputy Assistant Manager for Office of Program Execution (OPE)
- LMITCO INEEL Executive Vice President and Chief Operating Officer
- LMICO INEEL Site Operations Director (SOD)
- DOE ID TRA Facility Representatives (FRs) (3)
- DOE ID TRA Facility Engineers (FEs) (2)
- DOE ID Operational Safety Division Director
- DOE ID Environmental Programs and Settlement Agreement Division Director
- DOE ID Performance Assurance Division Director
- DOE ID TRA Facility Engineers and Subject Matter Experts (SMEs) (4)
- DOE ID Issues Management and Lessons Learned Program Manager

Observations

- LMITCO INEEL and DOE ID ISMS Status Presentations (series)
- INEEL ES&H and Quality (ES&H&Q) Training, with written examination
- INEEL General Employee and INEEL Access Training, with written examination
- DOE ID TRA Facility Management Staff Meeting
- TRA SAD and DOE ID TRA FD Performance Monitor Meeting
- ATR Plan of the Day (POD)(2)
- Walk Down of the ATR Facility with the ATR FR
- Walk Down of the ATRC Facility with the ATRC FR and ATRC FM
- Walk Down of the NMIS Facility with the NMIS FR and NMIS Operations Manager
- DOE ID TRA FR Seminar
- DOE ID FD Weekly Facility Director Conference Call
- DOE ID TRA Demonstration of the Oversight Information Management System (OIMS)

Discussion of Results

The INEEL Integrated Safety Management System Verification Phase I (ISMSV-I), completed in April 1999, identified several DOE-ID strengths and several opportunities for improvement in the DOE –ID efforts for the implementation of ISMS at INEEL.

The ISMSV-I Team reported that " . . . some DOE-ID processes are lagging and are not well documented, and opportunities exist to more fully involve the DOE-ID staff beyond the Office of Program Execution as ISMS is implemented . . ."

After the completion of the ISMSV-I, DOE-ID instituted a corrective action plan to address the identified "opportunities for improvement" while drawing on their "identified strengths." DOE-ID instituted a "project approach" using the same methods that LMITCO was utilizing for their ISMS implementation.

Specifically, DOE-ID sought to document the DOE-ID ISMS processes, strengthen the Quality Assurance (QA) and Configuration Management (CM) programs, and continue to develop and improve the Feedback and Improvement processes, while also staying actively engaged in the contractors' resolution of their ISMSV-I issues.

DOE-ID has reported considerable progress in addressing their identified areas for improvement. They have developed their own DOE-ID ISMS Description and supporting documentation. Some of this documentation has been completed very recently. They are now implementing their ISMS programs using their "project approach." They have begun to utilize feedback and improvement during their implementation process. Many of these improvement and documentation efforts are of a "DOE-ID site-wide" nature.

The heart of the ISMSV-I identified DOE-ID strengths were clearly sustained and demonstrated by the DOE-ID TRA organization and personnel during the course and within the scope of this ISMSV Phase II (ISMSV-II) which included ATR, ATRC, and NMIS. The DOE-ID TRA organization demonstrated that they met their ISMS requirements during this ISMSV-II.

The DOE-ID TRA organization has adequately implemented their ISMS to execute their responsibilities and provide oversight for the contractors' ISMS at ATR/ATRC/NMIS. The DOE-ID TRA organization can provide the oversight for the five ISMS Core Functions: (1) Define Scope; (2) Identify Hazards; (3) Implement Controls; (4) Perform Work; and (5) Feedback and Improvement.

Throughout the DOE and Contractor personnel interviews, the discussions indicated that the positive spirit of the DOE-ID TRA organization to ISMS, their demonstrated teamwork with the TRA contractor personnel, and their strong sense of line management responsibility for safety at TRA are substantial strengths. (ADOE 1-2)

These traits should also serve the DOE-ID TRA well during the transition of the Management and Operations Contractor (M&O) that occurs about one week after the completion of the

INEEL ISMSV-II. That transition will require dedicated attention, a consistently keen operational perspective, and resourceful professionalism.

The records reviewed included the DOE-ID ISMS description and supporting documentation, major DOE-ID TRA documentation for the supporting assessment and oversight programs, and documentation associated with safety, hazards, maintenance, and operations at ATR/ATRC/NMIS. This documentation provides adequate and consistent guidance delineating the DOE-ID TRA organization's roles and responsibilities for safety and oversight at ATR/ATRC/NMIS. The DOE-ID TRA is organized such that the DOE-ID TRA Facility Director (FD) is also the DOE TRA Program Manager and Contracting Officer's Representative (COR). This works well for the current organization.

The review of this documentation, combined with the results of the subsequent personnel interviews indicated that DOE-ID TRA has sufficient processes in place to confirm readiness prior to authorizing operations. The review of records included samples of the DOE-ID TRA records for the ATR Startup in April, and the current packages and documentation of the current ATR Outage for Maintenance.

In both cases, the review of those records indicated that DOE-ID TRA is actively involved in the preparations for work, the execution of the work, the assessment of readiness, and the approval for the resumption of operations at ATR/ATRC/NMIS. The DOE-ID TRA assessments of readiness are done in accordance with the DOE-ID directives and processes, using approved assessment plans, with adequate formality and rigor prior to the approval of ATR restarts.

DOE-ID documentation also adequately outlines the DOE-ID TRA processes for line management oversight of the ATR/ATRC/NMIS facility programs, and the day-to-day operational oversight by the DOE-ID TRA Facility Representatives (FRs). The results of the record review indicated that these processes have been adequately implemented. The documentation reviewed included the results of assessments, and DOE-ID TRA operational and maintenance activities documentation for ATR/ATRC/NMIS. The review of records, combined with the personnel interviews, indicated that the Facility Director, Deputy Facility Director, Facility Representatives (FRs) and Facility Engineers (FEs) are adequately involved in ATR/ATRC/NMIS operations.

DOE-ID is now completing the development and implementation of the documentation and execution of improvements for ISMS, but all of these efforts have not yet been completed. For example, DOE-ID action is still in progress to improve areas such as Configuration Management (CM), Quality Assurance (QA), the DOE-ID Directives System, and DOE-ID Independent and Self-Assessment efforts. Similarly, DOE-ID is working to develop and improve corresponding systems and processes such as the new DOE-ID Issues Management system and the related Oversight Information Management System (OIMS).

While these DOE-ID improvement efforts are not yet done, and their completion may require additional action by DOE-ID TRA (and provide improvements), the existing mechanisms at TRA are adequate for ATR/ATRC/NMIS. The review of the existing documentation indicated that DOE-ID TRA has sufficiently implemented their processes to provide oversight of the

contractor's hazard analysis, the contractor's tailored safety standards and requirements, and the implementation of the contractor's hazard mitigation programs and controls.

The review of the documentation associated with the DOE-ID TRA oversight of the maintenance of the contractor's Authorization Basis (AB) for ATR/ATRC/NMIS, included the documentation for the resolution of a current AB issue that is scheduled to be completed during the planned ATR outage. In this sampling, the review of the records and documentation indicated that the DOE-ID TRA organization has sufficiently implemented their processes to meet their responsibilities for oversight of their AB implementation.

The DOE-ID TRA documentation provides sufficient guidance for the implementation of feedback and continuous improvement processes at ATR/ATRC/NMIS and these processes are adequately implemented. However, a sampling of the results of TRA assessments and self-assessments during the past two years indicated that these processes are still improving, and there is still additional room for improvement in the areas of discrepancy identification, correlation, tracking, corrective actions, and trending, as the TRA contractor improves their self-assessment processes.

The DOE-ID OPE Self-Assessment process guidance is provided through the OPE Operational Excellence Program Manual 410.C-1 and recently approved DOE-ID directives. There has not yet been sufficient time to demonstrate the execution of this process. (ADOE 1-1)

The review of records and the associated interviews indicated that there is a common concern by DOE-ID, DOE-ID TRA and the current contractor's TRA organizations that there are still several other opportunities for improvement in the implementation of Assessment, Self-Assessment, and Improvement programs for ATR/ATRC/NMIS. These organizations are working to improve their processes for identification and correction of issues and problems, and they acknowledge this common concern.

In preparation for the M&O contractor transition at the end of this month, the new contract's List A and List B is being revalidated, and the Authorization Agreements (AAs) for the new contractor are being reviewed. The Authorization Agreement review and approval process is implemented per ID N 450.C and the OPE Operational Excellence Program Manual 410.C-1. The DOE-ID TRA organization has sufficient processes and mechanisms in place to oversee the new M&O contractor's implementation of their requirements during the transition at ATR/ATRC/NMIS.

The personnel interviewed included DOE-ID and DOE-ID TRA personnel, senior INEEL contractor line management and support personnel, and line management and operational personnel at ATR/ATRC/NMIS. These interviews, discussions, and seminars focused on the ATR/ATRC/NMIS ISMS systems and supporting processes, DOE-ID TRA systems and processes for assessment and oversight programs, and the processes directly associated with safety, hazards, maintenance, and operations at ATR/ATRC/NMIS.

The results of these interviews supported the conclusions reached by the review of records. Overall the DOE-ID TRA has adequate guidance and processes in place to execute their roles and responsibilities for ISMS safety and oversight at ATR/ATRC/NMIS.

The personnel interviewed indicated that there is also the need to continue to integrate specific activities and functions into operations and maintenance at ATR/ATRC/NMIS. For example, DOE-ID, DOE-ID TRA and the contractor identified the need to better integrate the Life Safety Systems organization's operations and maintenance (e.g., for National Fire Protection Association (NFPA) maintenance) into the ATR/ATRC/NMIS line management work control systems. Another example is the further development of the DOE-ID OIMS system, with its inclusion into the DOE-ID configuration management processes. These are examples of some of the continuing improvements that are now in progress.

The observation of activities and evolutions during this ISMSV-II included: DOE-ID and DOE-ID TRA meetings with INEEL contractor line management and support personnel; meetings with ATR/ATRC/NMIS line management and operational personnel; TRA training evolutions; DOE-ID TRA and TRA data system demonstrations; and Walk Downs with the Facility Representatives (FRs) and Facility Managers (FMs) of ATR/ATRC/NMIS. These observations, meetings, demonstrations, and Walk Downs focused on the ATR/ATRC/NMIS ISMS systems and supporting processes, DOE-ID TRA systems and processes for assessment and oversight programs, and the processes directly associated with safety, hazards, maintenance, and operations at ATR/ATRC/NMIS.

The results of these observations supported the conclusions reached by the record review and interviews. Overall the DOE-ID TRA has adequate guidance and processes in place to execute their roles and responsibilities for ISMS safety and oversight at ATR/ATRC/NMIS.

Conclusion: The objective has been met. The DOE-ID TRA organization has adequately implemented their ISMS to execute their responsibilities. DOE-ID TRA can provide adequate oversight for the contractor's ISMS at ATR/ATRC/NMIS, and for all five of the ISMS Core Functions: (1) Define Scope; (2) Identify Hazards; (3) Implement Controls; (4) Perform Work; and (5) Feedback and Improvement.

Issue(s)

- The DOE-ID OPE Self-Assessment process guidance is provided through the OPE Operational Excellence Program Manual and recently approved DOE-ID directives. There has not yet been sufficient time to demonstrate the execution of this process. (ADOE1-1)

Strength(s)

- The positive spirit of the DOE-ID TRA organization to ISMS, their demonstrated teamwork with the TRA contractor personnel, and the strong sense of line management responsibility for safety at TRA are substantial strengths. (ADOE1-2)

Inspector_____ Robert Baeder	**Team Leader**_____ Joseph Arango

Sub-Team: ATR	**FUNCTIONAL AREA: HAZ** **DATE**: September 15, 1999

OBJECTIVE: HAZ.1 The full spectrum of hazards associated with the Scope of Work is identified, analyzed, and categorized. Those individuals responsible for the analysis of the environmental, health and safety, and worker protection hazards are integrated with personnel assigned to analyze the processes. An integrated process has been established and is utilized to develop controls that mitigate the identified hazards present within a facility or activity. The set of controls is used to ensure adequate protection of the public, worker, and the environment and are established as agreed upon by DOE. These mechanisms demonstrate integration, which merge together at the workplace. (CE II-2, CE II-3)

Criteria

1. Procedures and/or mechanisms are in place and utilized by personnel to ensure hazards associated with the work throughout the facility have been identified and analyzed. The resulting documentation is defined, complete, and meets DOE expectations. The execution of these mechanisms ensure personnel responsible for the analysis of environmental, health and safety concerns are integrated with those assigned to analyze the hazards for the facility or activity. The use of these mechanisms ensures direction and approval from line management and integration of the requirements.

2. Procedures and/or mechanisms are in place and utilized by personnel that describe the interfaces, roles and responsibilities of those personnel who identify and analyze the hazards of the scope of work. Personnel assigned to accomplish those roles are competent to execute those responsibilities.

3. Procedures and/or mechanisms are in place to develop, review, approve and maintain current all elements of the facility Authorization Basis Documentation with an integrated workforce.

4. Procedures and/or mechanisms that identify and implement appropriate controls for hazards mitigation within the facility or activity are developed and utilized by workers and approved by line managers. These procedures/mechanisms reflect the set of safety requirements agreed to by DOE.

5. Standards and requirements are appropriately tailored to the hazards.

6. Procedures and/or mechanisms are in place to develop, maintain, and utilize Authorization Agreements.

7. Procedures and/or mechanisms are in place to effectively and accurately implement all aspects of the Authorization Basis.

Approach

Record Review: Review the documents that govern the conduct, review, and approval of facility hazard analysis such as Technical Safety Requirements MCP-2450 "Technical Safety Requirements", Fire Hazards Analysis (FHA) MCP-579 "Fire Hazards Analysis", Criticality Safety Evaluation (CSE) PRD-112 "Criticality Safety Program Requirements", Safety Analysis PDD-22 "Safety Analysis" and PRD-164 "Safety Analysis for Non-Nuclear, Radiological, and Other Industrial Facilities", and MCP-3680 "Environmental Aspect Evaluation and Maintenance" (EAE) to verify that these documents conform to the hazard analysis requirements. Review a sample of hazard control documents to verify safety controls are provided for the hazards identified and that the control strategy encompasses a hierarchy of 1) hazard elimination, 2) engineering controls, 3) administrative controls, and 4) personnel protective equipment. Typical documents include Preliminary Hazards Review (PHR), Preliminary Safety Analysis (PSAR), Safety Analysis Reports (SARs), Technical Safety Requirements (TSRs), Health and Safety Plans (HASPs), Auditable Safety Analysis (ASA), Fire Hazards Analysis (FHA), Criticality Safety Evaluation (CSE), etc. Review procedures and perform field verification for activities/processes such as STD-101 "Integrated Work Control Process," Radiological Work Permits (MCP-7 "Radiological Work Permit"), operations procedures (such as MCP-3480 "Environmental Instructions for Facilities, Processes, Materials, and Equipment), Hazards Identification and Control documents (MCP-3562 "Hazards Identification and Control of Operational Activities" or MCP-3571 "Independent Hazard Review") to ensure accurate and effective implementation of Authorization Basis documentation requirements. For nuclear facilities, the respective Authorization Agreement describes facility management processes and procedures required for safe operation of the facility. The Unreviewed Safety Question process, described in MCP-123, "Unreviewed Safety Questions," is used to ensure activities remain within the facility safety envelope. Where appropriate, review the process used to resolve Unreviewed Safety Questions (USQs) to ensure new tasks are being evaluated against the approved authorization basis as required by MCP-123, "Unreviewed Safety Questions." Review completed or in progress implementation documentation.

Interviews: Interview personnel responsible for the identification and analysis of work hazards including personnel responsible for ALARA review requirements. In nuclear facilities, for example, this should include personnel responsible for USQ determination, procedure technical reviews, etc. Interview personnel responsible for developing and implementing hazard controls and/or Authorization Basis
Documentation at the facility level. This should include personnel such as those responsible for SAR/TSR, FHA, CSE, and EAE preparations and implementation.

Observations: If possible, observe the actual preparation and field implementation of the analysis of hazards. In nuclear facilities, this should include an Unreviewed Safety Question Determination (USQD), preparation of a JHA, SAR/TSR, or Criticality Safety Evaluation, etc. Observe the actual processes development, review, approval, and implementation of

SAR/TSR, AA, and other Authorization Basis Documents as available. Where appropriate, observe that new tasks are being evaluated to determine if the tasks fall within the safety envelope described in the approved authorization basis as required by MCP-123, "Unreviewed Safety Questions."

Record Review:

- PDD-22, Safety Analysis
- PDD-1012, Environmental Management System
- PDD-1004, INEEL Integrated Safety Management System
- PDD-1005, Site Operations
- PRD-155, Emergency Management System
- PRD-164, Safety Analysis for Other than Nuclear Facilities
- PRD-5042, Facility Hazard Identification
- PRD-5043, Operational Safety Boards
- STD-101, Integrated Work Control Process
- CTR-36, ATR Facility Operations Safety Board (FOSB)
- CTR-4, Test Reactor Area Corrective Action Review Board (CARB)
- GDE-51, Project Management LMITCO Reactor Programs Organizational Chart
- MCP-7, Radiological Work Permit
- MCP-8, LMITCO Self-Assessments Process for Continuous Improvement
- MCP-33, Personnel Qualification and Certification
- MCP-35, Training Needs Analysis
- MCP-36, Job Analysis
- MCP-73, Incorporating Lessons Learned
- MCP-91, ALARA Program and Implementation
- MCP-123, Unreviewed Safety Questions
- MCP-190, Event Investigation and Occurrence Reporting
- MCP-192, Lessons Learned Program
- MCP-255, Preparation of Task-Specific Health and Safety and Limited Scope and Hazard Characterization
- MCP-540, Graded Approach and Quality Level Assignment
- MCP-522, Conduct of Independent Oversight Assessments
- MCP-553, Stop Work Authority
- MCP-579, Fire Hazard Analysis
- MCP-598, Process Deficiency Resolution
- MCP-2449, Nuclear Safety Analysis
- MCP-2450, Technical Safety Requirements (TSRs)
- MCP-2451, Safety Analysis for Non-nuclear, Radiological and Other Industrial Facilities
- MCP-2810, Identifying Configuration Controlled Items
- MCP-2811, Engineering Change Control
- MCP-3003, Performing Pre-job Briefs and Post-job Reviews
- MCP-3416, EM Program Baseline Development, Management and Reporting
- MCP-3447, Developing and Using Safe Work Permits

- MCP-3449, Safety and Health Inspections
- MCP-3480, Environmental Instructions for Facilities, Processes, Materials and Equipment
- MCP-3562, Hazards Identification, Analysis and Control of Operational Activities
- MCP-3571, Independent Hazard Reviews
- MCP-3680, Environmental Aspect Evaluation and Maintenance
- SP 10.1.2.5, Reactor Programs Self Assessment Program
- Form 230.01, Nonconformance Report
- Form 451.01, Environmental Checklist
- Form 136.43, ES&H Budget Development Checklist
- Form 414.89, Assessment Plan
- Form 433.24, Post-job Review Checklist
- Form 430.15, Facility Hazard List Data Collection Form
- Form 430.15A, Facility Hazard List Database Change Approval Form
- Form 431.20, USQ Safety Evaluation
- Form RP-0086D, USQ Screen for New Information
- Form RP-0807, Operations Daily Summary Report
- Reactor Programs Assessment Input Form (AIF)
- LST-99, Facility Hazards Identification and Control Information List
- TRA Maintenance Operations Work Control Work Order
- ATR Root Cause Analysis Report
- ATR ORPS Investigation Report
- ATR Radiation Work Permits (RWPs)
- ATR Accident/Injury Reports
- INEEL /EXT-99-00516, LMITCO ESH&QA Performance Measures and Trending Report in Support of Operational Excellence
- TRA Guard Force Job Safety Analyses
- VPP STAR Review - TRA
- TRA Site Area Director and Reactor Programs Department Manager Roles and Responsibilities
- TRA Employee Safety Team Meeting Minutes
- ATR Training Implementation Matrix
- ATR Training Program Manual
- ATR Radiological Work Permits
- ATR USQs
- Minutes of ATR Safety Committee
- PRD-112, Criticality Safety Program Requirements
- ATR Criticality Safety Evaluation
- ATR Safety Analysis Reports (SARs)
- ATR Technical Safety Requirements (TSRs)
- ATR Auditable Safety Analysis (ASA)
- ATR Fire Hazards Analysis (FHA)
- ATR Criticality Safety Evaluation (CSA)
- ATR Authorization Agreement

- ATR work planning package
- ATR Technical Safety Requirements Report
- ATR Fire Hazard Analysis Report
- ATR Preliminary Hazard Review
- ATR Preliminary Safety Analysis Report (PSAR)
- ATR Safety Analysis Reports (SARs)
- ATR Job Analyses (e.g., lead and crane operator)
- ATR Procedure for Accident Investigation
- ATR Accident Investigation Reports (all reports from last two quarters to date)
- ATR reports of safety and health for 1998 and last two quarters of 1999)
- DOE Manual 210, Performance Measure, Trend Analysis and Communication
- ATR Performance Measures and Trending Report
- Conduct of Maintenance and Work Planning
- Conduct of Operations

Interviews Conducted

- ATR Operations Manager
- Emergency Planning Coordinator
- Supervisor of Emergency Preparation and Implementation
- ATR Chemistry Coordinator
- ATRC Acting Supervisor
- DOE ID Facility Representatives (FR) and Subject Matter Experts (SMEs)
- TRA Nurse
- ATR Process Operator, shift 4
- Staff Engineer/ALARA Committee Chair
- ATR Shift Supervisor
- ATR Lead Senior Auxiliary Reactor Operator
- ATR Operations Manager
- ICARE System Administrator
- ATR Principal Engineer
- ATR Advisory Engineer
- ATR Staff Engineer
- TRA Physical Security Program Manager
- TRA Protective Forces/Operations Liaison
- ATR Facility Representative
- ATR Training Instructor/Shift Supervisor
- ATR Engineering and Project Management Manager
- TRA Maintenance Manager
- TRA Tool Crib worker
- TRA Electrician
- TRA Pipefitter
- TRA Crafts Foreman
- TRA Electrical Foreman

- TRA Preventive Maintenance Coordinator
- ATR Experiments Engineering Support Supervisor
- TRA Engineering and Projects Supervisor (Acting)
- ATR Training and Document Management Manager
- ATR Document Control
- ATR Maintenance Training
- TRA ES&H Manager
- TRA Waste Generator Facility Representative Supervisor/SME
- TRA Radiation Engineer
- TRA Industrial Hygienist/SME
- TRA Occupational Safety Supervisor
- TRA Quality Engineer
- TRA Industrial Safety/SME
- TRA Environmental Compliance
- TRA Environmental/SME
- TRA Environmental Supervisor

Observations

- ATR Facility Operations Safety Board (FOSB) – Training Meeting
- ATR Corrective Action Review Board (CARB)
- ATR Manager's Meeting
- ATR Staff/Safety Meeting
- ATR Plan of the Day Meeting (POD)
- Issues Communication and Resolution Environment (ICARE) database demonstration

Discussion of Results

Interviews and observations confirmed that the documented hazard analysis system in use at ATR adequately controls hazards to workers, the environment and the public, and conforms to appropriate requirements and DOE expectations. Implementation of hazard analysis and control was observed in the field and confirmed during interviews for STD-101 Integrated Work Control Process, MCP-7 Radiological Work Permit, MCP-3480 Environmental Instructions for Facilities, Processes, Materials, and Equipment, and MCP-3562 Hazards Identification and Control of Operational Activities to ensure accurate and effective implementation of requirements. Implementation of analyses resulting from TRA and ATR hazard control documents such as the Safety Analysis Report (SAR), Technical Safety Requirements (TSRs), Unreviewed Safety Questions (USQs), Radiation work permits (RWPs) and accident investigations were reviewed and verified that the controls are appropriately implemented. A review of an Unreviewed Safety Question Determination (USQD) and a job safety analysis (JSA) preparation confirmed that ATR implements an adequate process to ensure activities remain within the facility safety envelope and that new tasks are adequately evaluated against the requirements.

Interviews provided data that validate the integration of hazard identification, analysis and control across TRA organizations and across disciplines to ensure that work at ATR is performed within controls. Personnel including those persons assigned to analyze hazards and develop controls at the facility or activity levels were questioned about TRA and ATR procedures and mechanisms to ensure that analyses and control of environmental, health and safety concerns are integrated across the facility and across professional areas.

ATR uses the processes in STD 101, Integrated Work Control Process, and MCP-3562, Hazard Identification, Analysis and Control of Operational Activities, and MCP-3480, Environmental Instructions for Facilities, Processes, Materials and Equipment, to analyze and control hazards and provide for worker involvement in the process. MCP-3562 and MCP-3480 are in revision to improve how the process is structured and to clarify integration with environmental requirements. Per the procedures, workers are involved in the work control processes for hazard identification, analysis and control. As a result, periodically hazards are identified that were previously unrecognized. An ATR shift supervisor and senior operator confirmed their awareness of the environmental requirements for the processes under their control and participated in STD-101 walkdowns.

Interviews confirmed that the Environmental Checklist (EC) from MCP-3480, Environmental Instructions for Facilities, Processes, Materials and Equipment was being used in conjunction with the HPSC during the work planning process. The workers and managers at ATR displayed knowledge of the environmental regulations that apply to their area of responsibility.

ATR adequately implements their self-assessment process, per MCP-8. ATR's implementation of the procedure could benefit from clearer identification of the requirements being assessed and improved interfacing of self-assessments with the requirements of other inspections/assessment procedure such as MCP-3449, Safety and Health Inspections. It was reported that the requirement in MCP-3449 for a quarterly safety and health inspection of the entire worksite was not being met. The various checklists and forms used by ATR to conduct self-assessments lack a clear definition of the flow-down of requirements from MCPs and other program documents to ensure hazards associated with the work throughout the facility have been identified and analyzed. Clarified assessment requirements will improve the quality of the collected data, and help prevent duplication of the areas assessed. This issue has been identified as a deficiency through the functional area checklist review and is being tracked for correction.

The minutes of the TRA Safety Committee confirm strong employee involvement in the safety process and a viable formal system to address safety concerns and ensure resolution.

The Site Operations management process in PDD-1005 is being implemented well at ATR. The document describe the interfaces, roles and responsibilities of those personnel who identify and analyze the hazards of the scope of work, integrates site initiatives, standardizes practices, and resolves common operation, maintenance and support function issues. The document sets clear expectation for the principles of Conduct of Operations, Conduct of Maintenance, VPP and ISMS to form the philosophy and provide the foundation for the

contractor safety culture. ATR provides a good example of the effectiveness of this philosophy and foundation.

Field verification validated that the procedures and mechanisms in STD-101, Integrated Work Control Process, MCP-7, Radiological Work Permit, MCP-3480, Environmental Instructions for Facilities, Processes, Materials, and Equipment, and MCP-3562, Hazards Identification and Control of Operational Activities, adequately describe the interfaces, roles and responsibilities of those personnel who identify and analyze the hazards of the scope of work. These procedures are in place and used by TRA/ATR personnel to ensure hazards associated with the work throughout the facility are identified and analyzed and Authorization Basis documentation requirements are accurately and effectively implemented.

Field verification validated that ATR operations personnel receive appropriate training to ensure their competency to accomplish their responsibilities. ATR operations personnel interface appropriately and effectively with TRA support personnel who analyze the hazards of the scope of work. Both TRA and ATR personnel are trained in and cognizant of the hazard analysis requirements for their area of responsibility.

The FORIB/SORC process observed in operation at ATR ensures that changes to company and facility documents are viable, can be implemented, and will not adversely affect operations. The FTRIB review of company-wide documents and implementation plans for training requirements assures that key contractor staff are trained before the procedures become effective.

The documents that govern hazard analysis and control at the ATR facility were reviewed to verify that the conduct, review, and approval of facility hazard analyses conform to the standards for Authorization Basis development. A sample of the analyses taken from ATR's hazard control documents, such as Preliminary Safety Analyses (PSA), Safety Analysis Reports (SAR), Technical Safety Requirements (TSR), Unresolved Safety Questions (USQs), Job Safety Analyses (JSAs), accident investigation reports, and work order packages were reviewed to verify that safety controls are provided for identified hazards. Authorization Basis (AB) documents are maintained current through the USQ Process and changes and actions are given visibility at SORC reviews and staff/line management reviews during the annual update. Key ATR staff are trained on the AB documents and revisions.

ATR has a mature and sophisticated program to attract new business and to ensure that new experiments and projects can be accomplished within the reactor's safety parameters. Each ATR cycle has a stand-alone Core Safety Assurance Package (CSAP) to ensure the authorization basis is not exceeded and Experiment Safety Analysis Package (ESAP) to ensure each experiment has established limits and stays within the safety envelope. (AHAZ1-4)

Procedures and/or mechanisms that identify and implement appropriate controls for hazard mitigation within the facility or activity are developed and utilized by workers and approved by line managers. These procedures/mechanisms reflect the set of safety requirements agreed to by DOE.

In conjunction with the processes in STD-101, MCP-3562 and MCP-3480, ATR has implemented MCP-3003, Performing Pre-job Briefs and Post-job Reviews, to ensure that employees are fully aware of related job requirements, safety and health hazards, environmental compliance issues, and mitigating actions necessary to protect the employees, the public and the environment. This procedure provides another opportunity for employees to be involved in the work control process. (AHAZ1-2)

The ATR nurse exercised her personal initiative to contact an industrial hygienist from the TRA ESH&Q group and arrange for a familiarization walk through of every facility. Her objective was twofold – to better serve her patients by understanding the facilities and conditions they work in, and to know the buildings well enough to improve the quality of her response when treating a patient *in situ*. She has arranged to repeat the walk throughs to keep her knowledge current of changes to facilities and conditions. (AHAZ1-2)

The ATR Physical Security Officer and the Security Forces manager work together to prepare job safety analyses for the TRA guard forces. The PSO is on the TRA Safety Committee and is the security leader for the emergency response group. He uses this visibility to integrate ES&H issues and changes to buildings back to the guards. The Protective Force Area Foreman who supervises all TRA guards fills out temporary orders of changes to buildings that come to him from the PSO. Changes are incorporated as appropriate into the JSAs and training. The guards participate in monthly safety walkthroughs of their facilities. (AHAZ1-2)

The DOE-ID TRA organization, including Facility Reps and subject matter experts, (SME), was interviewed to determine whether ATR/TRA procedures and mechanisms reflect the agreed-to set of safety requirements. PDD 1004 reflects those DOE requirements in List A/List B of the contract. The contractor has performed an evaluation of the flow down of requirements as identified in PDD 1004 to the facility procedures. The process used for this requirements flowdown to the facility level is extensive and thorough. (AHAZ1-1) This process could be used effectively to ensure that facility procedures meet changing List A/List B requirements.

The ATR OSB, CARB, Manager's meeting, Staff meeting, and POD were observed to assess line management's review and approval of changes to procedures and/or mechanisms that identify and implement appropriate controls for hazard mitigation within the facility or activity. The charters for the meetings adequately cover all aspects of work at the facility. The meetings could make better use of available tracking and trending data to heighten visibility of emerging issues and better manage resources allocation to accomplish actions and resolve issues.

ATR appropriately tailors standards and requirements to the hazards by implementing the Hazard Screening Checklist, Environmental Checklist, and Hazard Mitigation Guide in STD-101, MCP-3562, and MCP-3480. Further tailoring occurs during the work package process walkdowns. The opportunity for employee involvement in these processes is well implemented at ATR and contributes to integrating the worker's knowledge of the hazards involved in the job to the tailoring of requirements.

The TRA ESH&Q organization was interviewed as a group to validate that safety standards and requirements agreed to by DOE are integrated across every ESH&Q discipline to implement appropriate and adequate controls to mitigate hazards and to interface effectively with those who manage hazards throughout the facility. An identified deficiency was tracked in the ICARE System to improve the integration of RadCon into the ATR Work Packages. The environmental group has released LST-99, Facility Hazards Identification and Control Information List, and will soon release a matrix of the Hazard Identification Systems to improve tailoring environmental requirements contained in multiple site databases to the hazards of the work to be performed.

ATR implements MCP-2449, Nuclear Safety Analysis and requires operations line management to ensure that the safety basis includes the necessary elements to protect the public, workers and the environment from the safety and health hazards posed by the nuclear facility. The ATR Safety Analysis Report documents the nuclear safety analysis, describes the facility's authorization basis, identifies Safety Class structures, systems and components (SSCs), and integrates the fire hazard analysis (FHA). ATR Technical safety requirements (TSRs) are based on the nuclear safety analysis. TSRs integrate all of the various program structures and ensure that requirements and guidelines are appropriately applied.

ATR/ATRC/NMIS have approved Authorization Agreements. The preparation, review, approval and maintenance of authorization agreements (AA) is addressed in MCP-3567. This procedure refers the primary author of an AA, normally the Facility Manager (FM), to another document TEM-2, Template for Authorization Agreements with Authorization Basis List. The template provides an effective and convenient tool that results in consistent format and content for all AAs. MCP-3567 appropriately requires that any new Hazard Category 1 or 2 facilities must have an approved AA in place before commencement of operation. Further, the FM is expected to obtain input from facility Subject Matter Experts (SME) and appropriate management before submitting the document to senior management approval by the Department of Energy. A review of the procedure and template revealed that not all the requirements specified in MCP-3567 were included in the template. Additionally the wording of a newly added paragraph in TEM-2 is ambiguous regarding the identification of the requirements of the AA. Both issues were minor and were provided directly to the contractor's SME for resolution and correction. Revised (draft) AAs, scheduled for implementation at the start of FY2000 due to M&O contract transition, were reviewed and found to be consistent with the requirements specified in the template. The AAs for all three facilities require the contractor to maintain the authorization bases consistent with facility configuration through an Unreviewed Safety Question Determination process, compliant with DOE Order 5480.21. Procedures and/or mechanisms are in place to effectively and accurately implement all aspects of the Authorization Basis.

The AAs require the contractor to operate the respective facilities in accordance with the operational controls specified in the Authorization Basis Lists, which are capable of being updated and controlled separately through the contractor's DMCS. The lists include elements such as a facility-specific Safety Analysis Report (SAR), and Technical Specifications (TS), Technical Safety Requirements (TSR), or Operational Safety Requirements (OSR), Safety Evaluation Reports (SER) and Unreviewed Safety Questions (USQ) associated with the

respective facility. It also may include DOE correspondence, which authorizes full or limited operation of the facilities, a SAR/TSR Implementation Plan, if the facility's SAR does not yet meet DOE Order 5480.23 requirements, environmental permits issued by the State of Idaho, and an Environmental Impact Statement (EIS). Requirements specified in the SAR, TSRs, and other authorization basis documents are implemented through detailed procedures which, at the ATR facility, number over 1,000. Many of the procedures were recently revised to incorporate new or revised requirements specified in the ATR Upgraded Final Safety Analysis Report (UFSAR), Revision 1, dated September 28, 1998 and the new Technical Safety Requirements, Revision 1, dated May 21, 1998. The operational procedures are currently being reviewed and updated under MCP-3562 to incorporate Job Safety Analysis (JSA) hazard mitigation controls. (See also AOP1 Assessment Form)

Requirements specified in the USQ procedure, MCP-123, appear to be implemented effectively as evidenced by the current restrictions on core power resulting from effects of a design basis loss of coolant accident (LOCA). During the course of this review, ATR staff were actively engaged in preparing updated safety basis documentation for submittal to the Department so that the restrictions could be relaxed. Interviews with key personnel indicate that there is widespread acceptance of the USQ process as a viable tool to maintain authorization basis documentation.

Accurate and effective implementation of Authorization Basis documentation requirements were verified through reviewing procedures and making field observations for activities and processes. The observed actions of the ATR Operations Manager are consistent with his high level of commitment to the safety of workers at ATR and the safe operation of the facility. Personnel throughout the organization displayed sound and expansive knowledge of the entire process for controlling hazards within their area of responsibility. Turnover meetings are held at the start of every shift to ensure operating conditions remain within the Authorization Basis. Training meets requirements and is adequate to ensure safe operation.

The TRA Emergency Preparedness Group uses the requirements from ATR's Authorization Basis Documentation to establish a "bounding accident" to develop the facility's emergency response envelope. Their envelope is used to manage response requirements and evaluate performance on drills. This process is an excellent example of safety integration because it requires integration professionals from multiple organizations, actively maintaining interfaces and ensuring competency of all personnel involved. (AHAZ1-3)

Conclusion: The objective has been met.

Issue(s):

- None

Strength(s):

- The process used for the requirements flowdown to the facility level is extensive and thorough. (AHAZ1-1)

- Employees are actively and aggressively involved in the hazard identification and control process. (AHAZ1-2)

- The emergency planning process provides a good example of safety integration because it requires integrating professionals from multiple organizations, actively maintaining interfaces between those organizations and ensuring competency of all personnel involved. (AHAZ1-3)

- ATR has a mature and sophisticated program to attract new business and to ensure that new experiments and projects can be accomplished within the reactor's safety parameters. (AHAZ1-4)

Inspector_____ Nancy Hammond	**Team Leader**_____ Joseph Arango

Sub-Team: ATR	**FUNCTIONAL AREA: MG.1** **DATE**: September 14, 1999

OBJECTIVE: MG.1 An integrated process has been established and is utilized to identify and prioritize specific mission discrete tasks, mission process operations, modifications and work items. An integrated process has been established that ensures that mechanisms are in place to ensure continuous improvements are implemented through an assessment and feedback process, which functions at each level of work and at every stage in the work process. (CE II-1, CE II-5)

Criteria

1. Procedures and/or mechanisms that require line management to identify and prioritize mission-related tasks and processes, modifications, and work items are in place and utilized by personnel.

2. Procedures and/or mechanisms are in place and utilized by personnel to ensure identified work (i.e., mission-related tasks and process, processes or facility modification, maintenance work, etc.) can be accomplished within the standards and requirements identified for the facility.

3. Procedures and/or mechanisms are in place and utilized by personnel to collect feedback information such as self-assessment, monitoring against performance objectives, occurrence reporting, and routine observation. Personnel assigned these roles are competent to execute these responsibilities.

4. Procedures are in place that develops feedback and improvement information opportunities at the site and facility levels as well as the individual maintenance or activity level. The information that is developed at the individual maintenance or activity level is utilized to provide feedback and improvement during future similar or related activities.

5. Procedures and/or mechanisms are in place and utilized by managers to identify improvement opportunities. Evaluation and analysis mechanisms should include processes for translating operational information into improvement processes and appropriate lessons learned.

6. Procedures and/or mechanisms are in place and utilized by managers to consider and resolve recommendations for improvement, including worker suggestions.

7. Procedures and/or mechanisms are in place, which include a process for oversight that ensures that regulatory compliance is maintained.

Approach

Record Review: Review the facility or activity long-range planning documentation. This should include such items as summary schedules, plan of the week schedules, long-range maintenance schedules, modification schedules, etc.

Review the procedures and mechanisms that line managers utilize to identify and prioritize mission-related tasks and processes, modifications, and work items. All direct funded work is controlled by procedures found in MCP-14, "Graded Approach to Defining Project Controls." Three key facility and activity level procedures mentioned in MCP-14 that are used to specify the detailed requirements of this graded approach are MCP-23, "Planning and Managing Projects with Grade I Cost and Schedule Controls," MCP-3543, "Planning and Managing Projects with Grade II Cost and Schedule Controls" and MCP-3544, "Planning and Managing Projects with Grade III Cost and Schedule Controls." Appendix B of MCP-14 defines Grade I, II and III projects. Indirect funded work is controlled by the process described in MCP-2668, "Financial Planning, Administration and Control of Indirect Activities/Work." Project Management for construction work also follows guidelines provided in GDE-51, "INEEL Guide for Project Management." Projects funded by the EM Program must meet additional but integrated project development and management requirements described in MCP-3416, "Environmental Management Program Baseline Development, Management and Reporting."

Review the procedures and/or mechanisms that are utilized by the facility or activity to ensure that identified work is accomplished in accordance with established standards and requirements. Standards and requirements are rolled down to the facility level for implementation utilizing the process described in MCP-2447, "Requirements Management." Review facility processes for ensuring standards and requirements promulgated by the MCP-2447 process are reflected in activities at the facility.

Review the performance monitoring documentation for the feedback and continuous improvement process. This should include such documents as occurrence reports, deficiency reports, results of post-job reviews, safety observer reports, Issue Communication and Resolution Environment (ICARE) reports and reports of self-assessments and independent assessments. Ensure occurrence reports and ICARE entries are being completed in accordance with the requirements specified in MCP-190, "Event Investigation and Occurrence Reporting" and MCP-2723, "Reporting and Resolving Employee Safety Concerns & Suggestions," respectively. Process deficiencies should be addressed by following the process described in MCP-598, "Process Deficiency Resolution." Lessons learned are managed and processed in accordance with the requirements described in MCP-192, "Lessons Learned Program." Management self-assessments are conducted in accordance with MCP-8, "LMITCO Self-Assessment Process for Continuous Improvement." The process of independent assessment of facilities and activities is described in MCP-552, "Conduct of Independent Oversight Assessments." The FY-99 schedule of independent oversight assessment activities can be found on the QA and Conduct of Operations internal homepage at URL: http://home.inel.gov/qa&coo/ipa.html. The Facility Excellence Program, described in PDD-1011, is a structured means of regularly assessing facilities for compliance

in any of these areas.

Review procedures for work control to determine that adequate feedback and improvement mechanisms are in place at the individual maintenance or activity level. MCP-3003, "Performing Pre-Job Briefings and Post-Job Reviews," is the activity-level requirements document for this process.

Review actual data from these processes to evaluate the effectiveness of the implementation of these mechanisms.

Interviews**:** Interview management personnel responsible for the identification and prioritization of work. This should include personnel such as those responsible for long-range planning documentation, schedule preparation, etc. Interview personnel responsible for administering the feedback and continuous improvement process. This should include personnel such as those responsible for occurrence reporting, lessons learned preparation, preparation, ICARE entries, self-assessment, and oversight. Interview personnel responsible for capturing and utilizing feedback and improvement information during individual maintenance or other work activities. Interview the facility ICARE representative. Interview line management to determine level of knowledge and involvement in the ICARE process.

Observations**:** Observe work definition and planning activities to ensure that requirements specified by the Requirements Management process (MCP-2447) are considered and implemented at the activity level. If possible, observe an Operational Safety Board (OSB) meeting and a Facility Operation Review and Implementation Board (FORIB) meeting. If possible, observe a program or project Change Control Board meeting. Observe a Post-Job Review. Observe any critiques that may arise throughout the course of the observation process.

Record Review

- GDE-51, INEEL Guide for Project Management
- PDD17, Performance Management Control System
- PDD-18, Document Management Control System
- PDD-19, Integrated Requirements Management Program
- PDD-1004, INEEL Integrated Safety Management System
- PDD-1005, Site Operations
- PDD-1007, Issues Management Program Description
- PDD-1011, Facility Excellence Program
- PRD-25, Activity Level Hazard Identification, Analysis, and Control
- PRD-185, Conduct of Operations
- STD-101, Integrated Work Control Process
- STD-107, Operational Configuration Management Process
- MCP-4, Contractor Performance-Based Business Management Process
- MCP-7, Radiological Work Permit
- MCP-8, LMITCO Self-Assessment Process for Continuous Improvement

- MCP-14, Graded Approach to Defining Project Controls
- MCP-23, Planning and Managing Projects with Grade I Cost and Schedule Controls
- MCP-33, Personnel Qualification and Certification
- MCP-49, Accident Reporting and Follow Up
- MCP-135, Creating, Modifying and Canceling Procedures and Other DMCS-Controlled Documents
- MCP-153, Industrial Hygiene Exposure Assessment
- MCP-190, Event Investigation and Occurrence Reporting
- MCP-192, Lessons Learned Program
- MCP-348, Waste Management Compliance Audits
- MCP-540, Graded Approach & Quality Level Assignments
- MCP-552, Conduct of Independent Oversight Assessments
- MCP-553, Stop Work Authority
- MCP-583, Fire Protection Assessments
- MCP-598, Process Deficiency Resolution
- MCP-2446, Controlling the LMITCO Nuclear Facilities and Nuclear Facilities Managers Lists
- MCP-2447, Requirements Management
- MCP-2514, Management of Construction Projects
- MCP-2668, Financial Planning, Administration and Control of Indirect Activities/Work
- MCP-2723, Reporting and Resolving Employee Safety Concerns and Suggestions
- MCP-2872, Work for Others (WFO)
- MCP-3003, Performing Pre-Job Briefings and Post-Job Reviews
- MCP-3449, Safety and Health Inspections
- MCP-3480, Environmental Instructions for Facilities, Processes, Materials and Equipment
- MCP-3543, Planning and Managing Projects with Grade II Cost and Schedule Controls
- MCP-3521, Trending Center
- MCP-3562, Hazard Identification, Analysis & Control of Operational Activities
- MCP-3596, Applying Management Compensatory Measures to STD-101 Work Orders
- LST-99, Facility Hazards Identification and Control Information List to Support MCP 3480
- Unnumb, Hazards Identification System Cross-Walk to Support Maintenance of LST-99
- FORM- 624, Power Reactor Programs Assessment Input Form (AIF)
- SP-10.1.2.18, Power Reactor Performance Improvement Program (NPIP)
- CTR-36, Advanced Test Reactor (ATR) Facility Operations Safety Board (OSB) Charter
- CTR-4, Test Reactor Area (TRA) Corrective Action Review Board (CARB) Charter
- CTR-2, Facility Operations Review and Implementation Board (FORIB) Charter

- Unnumb, TRA Employee Safety Team Charter - 1999
- DOE –ID Performance Monitor Meeting Notes of 9/7/99
- LMITCO OSB Meeting Minutes for 8/19/99, and 8/31/99
- LMITCO CARB Meeting Minutes for 6/28/99, 7/19/99, 8/2/99, 8/17/99, and 8/30/99
- LMITCO Training Board Meeting Minutes for 6/28/99
- LMITCO Senior Supervisory Watch (SSW) Training Material for SSW Program Implemented Under MCP 3596
- LMITCO Documentation Flow Down Crosswalk Table
- ATR Operations Fourth Quarter FY-99 Self-Assessment Schedule
- ATR Operations Third Quarter FY-99 Self-Assessment Completion Report
- Self-Assessment Completion Bar Graphs for Calendar Year 1999
- Various Self-Assessment Completed Report Forms
- ATR Self-Assessment's Plan for Contractor Expanded Review for ATR Restart Following LOCA Issue Modifications and Associated TSR Change
- Current ICARE status summary

Interviews Conducted

- LMITCO Manager for Engineering & Project Management
- LMITCO Manager for Self –Assessments
- LMITCO Manager for ATR Operations
- LMITCO Deputy Manager for ATR Operations
- LMITCO Assessment Coordinator for ATR Operations
- LMITCO TRA Maintenance Manager
- LMITCO Maintenance Planning & Scheduling Supervisor
- LMITCO ES&H Manager
- LMITCO ICARE Coordinator
- LMITCO Configuration Management Program Coordinator
- LMITCO Training and Document Management Manager
- LMITCO Document Management Supervisor

Observations

- Operational Safety Board (OSB) meeting
- Corrective Action Review Board (CARB) meeting
- Walk through demonstration of a typical ICARE entry and processing
- Monitor an assessment by a self-assessment team member
- Plan of the Day meeting
- Walk through demonstration of the ATR Document Management process
- Walk through demonstration of the system for documenting and managing maintenance post-job review comments under STD-101 and MCP-3003
- Self-Assessment Team training session

Discussion of Results

The senior managers at ATR are involved in all aspects of the safety management program. They demonstrated an aggressive attitude towards the details of all aspects of the INEEL ISMS. (AMG1-2)

The procedures and mechanisms that line management uses to identify and prioritize mission-related tasks and processes, modifications, and work items were reviewed and found effective. ATR has a very mature and effective process for identifying and prioritizing mission-related tasks, modifications and work items. This system has been coordinated with and incorporated into the INEEL ISMS. MCP-14, MCP-23, MCP-3543, MCP-3544, MCP-2668, and GDE-51 for planning and managing projects are in place and implemented.

ATR plant modifications are identified and prioritized using Standard Procedure 10.1.2.18, Nuclear Performance Improvement Program (NPIP) and controlled using MCP-2811, Design and Engineering Change Control. Preventive maintenance and surveillance requirements have been clearly defined and are well managed. Changes to preventive maintenance and surveillance requirements are identified through the safety basis update and the MCP-2811 processes.

Corrective maintenance items are identified by a continuous walkdown and inspection process and documented in the local ATR Assessment Input Form (AIF) system. The AIF system has been in existence for many years for managing ATR specific corrective maintenance, and the decision has been made to retain this proven system instead of going to the ICARE system. This is a reasonable and appropriate approach. The AIF system has been integrated with the ISMS. The prioritizing process of MCP-598, Process Deficiency Resolution, is used to prioritize corrective maintenance identified in the AIF system.

There is active and continuous management focus on work identification, planning and prioritizing. There are: regularly scheduled dedicated prioritizing meetings; 7-year planning meetings; outage planning meetings; formal semi-annual test-planning meetings with the primary sponsor; and daily plan-of-the-day meetings to make final scheduling adjustments. Personnel assigned these roles are competent by reason of past experience, professional qualifications and training in the procedures and mechanisms to execute their responsibilities. The INEEL ISMS and management controls to identify and prioritize specific mission discrete tasks, mission process operations, modifications and work items are in place.

Procedures and mechanisms to ensure identified work can be accomplished at ATR within standards and requirements identified for the facility and were being used by personnel were reviewed. ATR operations and work are very predictable in type and scope. Standards and requirements baselines have been well established and implemented. The previously existing requirements management system has been integrated with the INEEL ISMS system. MCP-2447, Requirements Management, is implemented. Personnel assigned these roles are competent by reason of past experience, professional qualifications and training in the procedures and mechanisms to execute these responsibilities. The INEEL ISMS systems and

management controls to ensure work is accomplished within standards and requirements identified for ATR are in place and are effective.

Procedures and mechanisms to collect feedback information such as self-assessment, monitoring against performance objectives, occurrence reporting and routine observation were reviewed, and personnel assigned these roles were assessed to ensure they are competent to execute these responsibilities. The INEEL occurrence reporting (ORPS) system to meet DOE requirements is fully implemented at ATR. Corrective actions from ORPS reports are entered into the ICARE system and tracked to completion.

The ICARE system is implemented at ATR in accordance with MCP-190 with a full-time, ICARE system coordinator to monitor system performance. This coordinator was very knowledgeable and competent to perform her duties. A review of a current ICARE status report indicates that the system is being used across the site and that entries are being made in accordance with MCP-190.

The Reactor Programs Self-Assessment program is implemented in accordance with MCP-8, LMITCO Self-Assessment Process for Continuous Improvement. The ATR part of the program is well organized, comprehensive and rigorously managed (AMG1-3). The self-assessment program in the support areas has some weaknesses. The Manager for Self-Assessments recognizes these, and plans are in place to upgrade this part of the program. The results of all self-assessments are entered into ICARE or the AIF system, and this process is tracked and verified by the Manager for Self-Assessments.

There is a team of five full-time assessors under the Manager for Self-Assessments. There is a training program in place for this team. One self-assessment by a self-assessment team member was observed, and it was professionally conducted using a checklist prepared ahead of time. One self-assessment team training session was monitored, and it was evaluated as very effective. In addition, ATR personnel are also assigned self-assessments as a collateral duty. To ensure that these personnel are ready to provide meaningful assessments, the Manager for Self-Assessments and the Assessment Coordinator for ATR Operations conduct one-on-one training.

The Lessons Learned program is in the final stages of being implemented in accordance with MCP-192. The independent assessment program under MCP-552 is implemented and coordinated and monitored by the Manager for Self-Assessments.

During the transition to ISMS, a Senior Supervisory Watch program has been established under MCP-3596, Applying Management Compensatory Measures to STD-101 Work Orders to provide transition control of work packages developed and performed in accordance with STD-101 and the Voluntary Protection Program (VPP). This program did include training to ensure assigned personnel understood their duties and responsibilities (AMG1-4).

A review of a large number of ISMS MCPs applicable to ATR indicates that requirements to provide feedback information are routinely integrated into these procedures. A spot check for self-assessment and feedback was conducted for the configuration management system.

In addition to providing input to the Reactor Programs Integrated Assessment Plan, vertical assessments, the Configuration Management Program has horizontal assessment and feedback mechanisms instituted. MCP-1011, Facility Excellence Program, has been implemented at ATR.

The INEEL ISMS systems and procedures for collecting feedback information through self-assessment, occurrence reporting, monitoring against performance objectives, and routine observations are in place and integrated into the operations at ATR. Personnel assigned these roles are competent by reason of past experience, professional qualifications, and training to the new procedures and mechanisms to execute their responsibilities.

Procedures for work control were reviewed to assess if adequate feedback and improvement mechanisms are in place within the maintenance activities. This review included interviews with the maintenance managers and a demonstration of the maintenance activity feedback and improvement system. The post-job review requirements under STD-101, Integrated Work Control Process, and MCP-3003, Performing Pre-Job Briefings and Post-Job Reviews, are being conducted for all maintenance work activities, including overall post-outage critiques. Post-job reviews have historically been done at TRA, but the system was informal.

As part of implementing MCP-3003, a new electronic tracking system has been developed and is in place. The system is currently being upgraded further to provide even better information flow to all who need the feedback information, more efficient feedback to management, and improved efficiency in managing the data base. Personnel assigned these roles are competent by reason of past experience, professional qualifications and training in the procedures and mechanisms to execute these responsibilities.

The processes for identifying improvement opportunities through the established formal management focus boards and Safety Team meetings were reviewed. Management has established a series of boards and regular planning meetings in addition to planning to identify opportunities for improvement. The ATR Facility Operations Safety Board (FOSB) meets on a formally scheduled basis to provide integrated reviews of a broad range of subjects and activities, and results are used to advise the Operations Manager. The Test Reactor Area Corrective Action Review Board (CARB) supports operational excellence by ensuring that the issues management systems are functioning effectively and efficiently. The facility Operations Review and Implementation Board (FORIB) provides a vehicle to review, assess, and identify the impacts and costs associated with implementation of company-wide documents and to ensure that facilities and areas are in position to achieve compliance with new or revised Company Level documents prior to their issuance. The Employee Safety Team meets on a monthly basis with representatives from each department assigned to TRA, and the primary goal is to promote employee involvement in the safety process. A Training Board meets periodically to address training related issues and evaluate opportunities for improvement. Formal Plan-of-the-Day meetings are held each morning which include discussions of safety issues and opportunities for improvement. The reporting procedure for the Self-Assessment discussed above is also a major mechanism by which management identifies improvement opportunities. The ICARE system is primarily used to document and track issues.

The formal charters for the OSB, CARB, FORIB, and TRA Employee Safety Team were reviewed and were evaluated as sufficiently detailed and complete to be effective working documents for accomplishing the goals stated. Minutes from past meetings of some of these groups were randomly sampled for review and were evaluated as adequate working documents for identifying and initiating tracking of issues. Personnel responsible for managing the work of these various key forums appeared uniformly competent and qualified to execute their responsibilities.

Upgrading documents is a fundamental mechanism of feedback and improvement. An in depth interview was conducted with the Training & Document Management Manager and the Document Management Supervisor. A walk through of the document control system was conducted as well as a review of its current status. PDD-18, Document Management Control System, and SP.10.2.2.3, Document Action Request, are implemented. Document change requests are evaluated through a formal prioritization process and a tracking and status system is in place, which is managed by the dedicated Document Management Supervisor. Document Control status including unresolved prioritization issues is used by the Training & Document Management Manager to provide feedback to other managers at the weekly Staff Meetings.

The ATR document control system is currently under a great deal of stress due to ISMS implementation. This has been caused by development of many new procedures, revisions to and reformatting of virtually all previously existing facility specific procedures, and processing of a large number of changes that will be generated by the MCP-3562, Hazard Identification, Analysis and Control of Operational Activities, process. Currently, this increased workload is being managed through the use of sub-contracts for temporary office help and for word processing and formatting revisions through a local company. The ability of the ATR document management process to meet the demand for services will be seriously degraded if the sub-contracts are not expeditiously renewed by the incoming INEEL M&O contractor or comparable services are not provided by October 1, 1999 (AMG1-1). The personnel associated with the document control process appear to be competent and sufficiently trained to execute their responsibilities.

Worker suggestions are handled through the ICARE system. Any employee can enter a suggestion into the ICARE system, and this can be done in a variety of ways. Provisions are available for making anonymous entries, if desired. Any suggestion made or issue raised by a worker in ICARE cannot be closed out without that employee's concurrence. This is evaluated as an effective worker suggestion mechanism.

The procedures and mechanisms, which include a process for oversight, that ensure that ensure regulatory compliance is maintained were reviewed. A detailed interview was conducted with the TRA ES&H Manager. Requirements flow down from the Code of Federal Regulations, State Regulations and DOE Orders to the company documents and manuals. PDD-1012, LMITCO Environmental Management System; Manual 8, Environmental Management; PDD-1003, Waste Generator Services, Implementation Phase; Manual 17, LMITCO Waste Management; and MCP 3480, Environmental Instructions for

Facilities, Processes, Materials and Equipment, are implemented. The check lists in both STD 101 and MCP-3562 lead the user to environmental, safety and health regulatory compliance requirements in work planning reviews and operating procedure walkdowns.

The staff under the TRA ES&H Manager is formally involved in the work planning process and pre-job walkdowns. Independent oversight of ES&H compliance at ATR is provided by a full-time representative from LMITO Environmental Affairs assigned to TRA. The TRA ES&H Manager provides self-assessment lists to the Manager for Self-Assessments for the Reactor Programs Integrated Assessment Plan. A plan for managing the numerous lists of hazards is being implemented through LST-99, Facility Hazards Identification and Control Information List. A crosswalk is in the draft phase to tie all the lists on LST-99 together. LST-99 along with the supporting crosswalk is intended to ensure that the proliferation of hazards lists are coordinated, used properly and maintained up to date.

A unique feedback mechanism from the training department to the workers to support continuous improvement is in place. It is a 115 page, 3" x 5", pocket sized TRA ES&H INFORMATION BOOKLET. This booklet contains a quick reference for workers and managers on ES&H and work control requirements. It also contains useful phone numbers and points of contact as well as referencing the applicable company directives for each section. The employees at all levels are very enthusiastic about this ready reference booklet and tend to carry it with them at all times. This very handy and useful training aid is a noted strength in the area of feedback and improvement and in helping ensure that work is accomplished under the proper controls (AMG1-5).

Conclusion**:** The objective has been met. The contractor has established and utilizes an integrated process to identify and prioritize specific mission discrete tasks, mission process operations, modifications and work items. It is apparent that a previously mature, successful system has been fully incorporated into INEEL ISMS implementation at ATR. Enthusiasm and commitment to excellence in this area is apparent at all levels. The contractor's programs, requirements, and procedures ensure that continuous improvements are implemented through an assessment and feedback process which functions at all levels of work and at every stage in the work process. Assessment and feedback is embedded in all levels of the company procedures and manuals. Management commitment to feedback and improvement is clearly apparent.

Issue(s)

- The document management system is heavily loaded as a result of ISMS implementation and is dependent on temporary service sub-contracts. Special management attention is required to ensure that sufficient resources continue to be provided during the change of M&O contractors. (AMG1-1)

Strength(s)

- The senior managers are involved in all aspects of the safety management program. They demonstrated an aggressive attitude towards the details of all aspects of the INEEL ISMS. (AMG1-2)

- The ATR portion of the Reactor Programs Self-Assessment Program is well organized, comprehensive and rigorously managed. (AMG1-3)

- The Senior Supervisory Watch initiated under MCP-3596 provides for significant, immediate feedback and improvement from a senior management level for jobs in progress during the transition to STD-101. (AMG1-4)

- The TRA ES&H INFORMATION BOOKLET is a unique feedback mechanism from the training department to the workers to support continuous improvement. (AMG1-5)

Inspector_____ Lawrence E. Miller	**Team Leader**_____ Joseph Arango

Sub-Team: ATR	**FUNCTIONAL AREA: MG.2** **DATE**: September 14, 1999

OBJECTIVE: MG.2 Clear and unambiguous roles and responsibilities are defined and maintained at all levels within the facility or activity. Managers at all levels demonstrate a commitment to ISMS through policies, procedures, and their participation in the process. Facility or activity line managers are responsible and accountable for safety. Facility or activity personnel are competent commensurate with their responsibility for safety. (CE II-6)

Criteria

1. Procedures and/or mechanisms are in place and utilized by personnel that define the roles and responsibilities for the identification and prioritization of mission-related tasks and processes, facility or process modification, and other related work items.

2. Procedures and/or mechanisms are in place that define clear roles and responsibilities within the facility or activity to ensure that safety is maintained at all levels.

3. Facility or activity procedures specify that line management is responsible for safety.

4. Procedures and/or mechanisms are in place and utilized to ensure that personnel who supervise work have competence commensurate with their responsibilities.

5. Procedures and/or mechanisms are in place and utilized to ensure that personnel performing work are competent to safely perform their work assignments.

Approach

Record Review: Review organizational documentation such as MCP-1752 "RWMC Facilities Responsibilities," PDD-1015 "AEDL Research Laboratory Operations," "Idaho Falls Facilities Tenants' Manual," MCP-3640 "Central Facilities Area Operations Information Roles And Responsibilities" and other similar documents for TRA and WERF to determine the personnel positions with responsibility associated with this objective. Ensure roles and responsibilities for personnel responsible for safety are clearly defined and understood and properly executed. Review should include position descriptions, Form-325.01 "Employee Position Description" and other applicable MCPs that describe roles and responsibilities related to ensuring safety are maintained. The review should consider personnel in line management and staff positions and should evaluate whether line managers are responsible for safety. Review the procedures established such as PDD-13 "Training and Qualification Program," MCP-27 "Preparation and Administration of Individual Training Plans," and MCP-33 "Training Qualification and Certification" to ensure that managers and workers are competent to safely perform work. Review the personnel records that should include the "Training and Implementation Matrix" (TIM), "Individual Training Plans" and "Employee Training History," to identify the individual qualifications that meet the elements of the position descriptions. Review the applicable records of qualification and certification.

Review any training or qualification material, including training and qualification manuals such as Manual 12 and the associated "yellow sheets" that support gaining or verifying competence to fill the positions.

Interviews: Interview selected personnel at all levels of facility or activity management that are identified by the record review above. Verify their understanding and commitment to ensure that safety is maintained for all work at the facility or activity. Interview a selected number of supervisors and workers to determine their understanding of competency requirements and their commitment to performing work safely.

Observations: Observe training being delivered for key programs such as hazards identification and analysis. Observe scheduled activities that demonstrate that clear roles and responsibilities are established and understood, that line managers are actively involved with decisions affecting safety, and that managers and workers are competent to perform their duties. Activities such as weekly planning meetings, plans of the day, event critiques, safety training, OSB meetings, pre-job briefs, Site Operations Council (SOC) meetings, Corrective Action Review Boards (CARBS) and safety meetings are typical events that may provide good examples of the safety training and decision making process. Activities such as facility/process operations, testing, and maintenance will provide opportunities to observe personnel in the execution of roles and responsibilities, their understanding of procedures, awareness of hazards and management commitment to safety.

Record Review

- PDD-13, Training and Qualification Program, 3/17/99
- MCP-27, Preparation and Administration of Individual Training Plans, 10/22/97
- MCP-33, Personnel Qualification and Certification, 3/17/99
- MCP-36, Job Analysis, 8/25/97
- Advanced Test Reactor Training Implementation Matrix, Issue No. 5, 9/18/95
- Document ID: ATRTPM, Program Description Document for ATR Training Program Manual, 4/97
- MCP-3192, TRA Supplemental Procedure to MCP-29, Training Staff Qualification, 11/18/97
- MCP-3193, TRA Supplemental Procedure to MCP-36, Job Analysis, 11/18/97
- MCP-3196, TRA Supplemental Procedure to MCP-45, Examination Banks, 11/18/97
- MCP-3198, TRA Supplemental Procedure to MCP-52, On-The-Job Training Materials Development, 11/18/97
- MCP-3199, TRA Supplemental Procedure to MCP-57, Conduct of Training, 11/18/97
- MCP-3200, TRA Supplemental Procedure to MCP-64, Performance Examination, 11/18/97
- MCP-3201, TRA Supplemental Procedure to MCP-65, Written Examinations, 11/18/97
- MCP-3202, TRA Supplemental Procedure to MCP-66, Oral Examinations, 11/18/97
- MCP-3205, TRA Supplemental Procedure to MCP-64, MCP-65, and MCP-66; Implementing, Evaluating, and Conducting Remedial Training, 7/30/98
- TRA Supplemental MCP-3192 – MCP-29, Training Staff Qualification (Draft)**.**

- TRA Supplemental MCP-3193 – MCP-36, Job Analysis (Draft)
- TRA Supplemental MCP-3196 – MCP-45, Examination Banks (Draft)
- TRA Supplemental MCP-3198 - MCP-52, On-The-Job Training Materials Development (Draft)
- TRA Supplemental MCP-3199 – MCP-57, Conduct of Training (Draft)
- TRA Supplemental MCP-3200 – MCP-64, Performance Examinations (Draft)
- TRA Supplemental MCP-3201 – MCP-65, Written Examinations (Draft)
- TRA Supplemental MCP-3202 – MCP-66, Oral Examinations (Draft)
- TRA Supplemental MCP-3205 – MCP-64, MCP-65 and MCP-66, Implementing, Evaluating and Documenting Remedial Training(Draft)
- TRA Supplemental MCP-3206 – MCP-79, Instructional Materials Control (Draft)
- TRA Supplemental MCP-3207 – MCP-61, Conduct of On-The-Job Training (Draft)
- Form 325.01, Employee Position Description (several position descriptions for senior managers, supervisors, operators, and crafts were sampled and reviewed)
- Employee Individual Training Plan (Total) (several Web-based TRAIN Reports for senior managers, supervisors, operators, and crafts were sampled and reviewed)
- INEEL Employee Training History (several Web-based TRAIN Reports for senior managers, supervisors, operators, and crafts were sampled and reviewed)
- TRA CARB Agenda – 9/7/99
- ATR Facility Operations Safety Board, Training Meeting Agenda, 9/8/99
- 1995 Electrician Job Task List
- TRA Electricians Job Analysis Task Listing, validated 8/99
- Electricians Task List Validation Summarization, 8/99
- Task to Training Matrix for TRAMO Electrician, Rev. 0, 8/23/99
- Training Improvement Proposal System (TIPS), TIP #2699 and TIP #2606
- Student Booklet: “Final LOCA USQ Resolution Training,” 8/99
- Reactor Programs Checklist Approval Record, Title: “ATR Final LOCA USQ Resolution, 8/4/99
- ATR Plant Specific Training ATR Simulator Exercise Guide, Title: Momentary Loss of Commercial Power, SE#: 31.98.14.12, Rev. 1, approved 10/27/97
- Handouts from Third Quarter ES&H Training – Personal Protective Equipment (00TRN288.T0100) and information copy of MCP-2716, Personal Protective Equipment
- Interdepartmental Communication from S. A. M. Schmidt to C. E. Dodd, Experiment Operator School Evaluation Summaries for December 1997 through August 1998 – SAM-01-98,” 10/28/98
- Interdepartmental Communication from S. A. M. Schmidt to C. E. Dodd, Oral Examination Trends for QRCS and Walkthroughs Conducted from September 16, 1998 – December 31, 1998 – SAM-12-99, 2/11/99
- Test Reactor Area Work Order Package 14562
- E-mail from J. J. Miller to J. D. Edelmayer, Ni-63 Detection Technique Development, 9/9/99
- Engineering Design File, EDF No. TRA-HC-1513, Develop self-absorption correction factor for Nickle-63 removable contamination surveys, prepared 9/7/99

<u>Interviews Conducted</u>

- Reactor Programs Director
- Training & Document Management Manager
- ATR Operations Training Supervisor
- LMITCO Subject Matter Expert for Training
- Maintenance Instructor
- Seminar-style interview with electrician, mechanic, fitter, radcon technician, outer area operator, reactor area operator, and senior reactor operator
- Seminar-style interview with Site Operations Training Director, Training & Document Management Manager, Maintenance Instructor, RadCon Instructor, and two Operations & Simulator Instructors.
- Maintenance Foreman
- TRA Radiological Control Supervisor

Observations

- Plan of the Day Meetings, (2)
- Weekly Planning Meeting
- Corrective Action Review Board (CARB) Meeting
- Simulator Drill, Momentary Loss of Commercial Power
- Operations Safety Board Meeting
- Final LOCA USQ Resolution Training
- Third Quarter ES&H Training
- Pre-work walk down of job site for Work Order 14562

Discussion of Results

From a corporate perspective, roles and responsibilities for key positions and management boards are defined in PDD-1004, INEEL Integrated Safety Management System and PDD-1005, Site Operations. At TRA, roles and responsibilities are presently defined in several documents such as safety analysis reports, training implementation matrix documents, and procedures. These procedures clearly define and assign to line management the responsibility for safety at all levels. TRA management has drafted new Standard Practices that clearly define roles and responsibilities in a single location for the Site Area Director and Reactor Programs Manager and individuals reporting directly to him including, ATR Operations, Plant Systems Engineering, ESH&QA, Issue Management, TRA Maintenance Organization, and Training and Document Management. The draft standard practices are being reviewed and approved in accordance with the company Document Action Request (DAR) process. Document reviews, observations, and interviews indicate that roles and responsibilities are well defined for most workers. Roles and responsibilities for the Plan-of-the-Day Coordinator, the Self-Assessment Coordinator and the TRAMO organization are not as clearly defined as other positions at TRA, and represent opportunities for improvement. (See AOP1-3)

Employee Position Descriptions (Form 325.01), Individual Training Plans, and Employee Training Histories for several senior managers, supervisors, operators, and crafts were sampled and reviewed. Employee Position Descriptions identified roles and responsibilities for ensuring that safety is maintained. A statement in the position description requires that the individual "Must be familiar with and comply with all relevant health and safety requirements." Although identified as an "Environment, Safety and Health Statement," it appears to focus on health and safety and does not explicitly include the term "environment." The full intent of the statement would be clarified and strengthened by explicitly including environmental expectations within the scope of the statement. Position descriptions for senior managers and supervisors included a statement about responsibility for ensuring that the principles of the Integrated Safety Management System are applied to all work planning, control, and execution.

PDD-13, Training and Qualification, describes the LMITCO program for ensuring that workers have the ability to perform their job functions safely, competently, and effectively. This program is designed to meet the requirements of DOE 5480.20A, "Personnel Selection, Qualification and Training Requirements for DOE Nuclear Facilities." A Training Implementation Matrix (TIM) and Training Program Manual (TPM) have been developed for the ATR, ATRC and NMIS. The ATR TIM and TPM were reviewed during this evaluation.

The training program at TRA follows the requirements set forth in company-wide Manual 12, Training and Qualification. Details concerning training practices at TRA and exceptions to company requirements are identified in Supplemental Procedures. Supplemental Procedures have in place at TRA since 1997, and presently are being revised to reflect recent changes in company-wide procedures. The LMITCO Operational Training Director, who is the signature authority for Manual 12, must approve supplemental procedures. A review of the ATR Operation Training Program as well as observation of the simulator training indicates a well defined mature program. (AMG2-1)

A systematic approach to training (SAT) is employed that incorporates five key elements: analysis, design, development, implementation, and evaluation. Job analysis is used to identify work tasks for various job classifications. The job analysis process used for TRA electricians was reviewed. The baseline job analysis was performed in 1995, and by procedure needs to be reviewed biennially. A review of the baseline job analysis for electricians was conducted during the summer of 1999. The revised job analysis task listing was validated in August 1999. Tasks are sorted into four categories: tasks that require no formal training, tasks requiring pre-training each time it is performed, tasks requiring only initial training, and tasks requiring initial and continuing training. A Task-to-Training matrix was developed to systematically identify existing classroom training, on-the-job training and initial qualification checklists, and gaps where additional training needs to be developed. The task listing and matrix represent a comprehensive and systematic analysis of the tasks and training required of an electrician.

Supplemental Procedure MCP-3193 specifies the use of features in the locally maintained TASKMASTER ™ database to store revised job task information and identify lesson plans that may be affected by the revisions. This is necessary since the company-wide Training

Records and Information Network (TRAIN) database does not support some site-specific functions that are currently in use at TRA. The TASKMASTER™ database was transferred from a DOS to Windows platform in November 1998 to make it Y2K compliant. Since then, difficulties with the database, including inability to access, manipulate and print database information, have limited the program's usefulness. The difficulties appear to be largely administrative in nature, however, the last Training Improvement Proposal System (TIPS) item entered into the database was dated April 1999. Resolution of the database difficulties represents an opportunity for improvement in day-to-day operations.

Information obtained from interviews and observations suggest that both management and workers believe that they are receiving training necessary to perform their jobs safely and efficiently. There was a strong commitment expressed at all levels to perform work safely. Craftsmen expressed considerable satisfaction and pride in the positive influence they have made during the job planning process while participating on walk-downs of work sites. Workers and management acknowledge the significant commitment of time during the past year to training required for implementation of the INEEL ISMS, VPP, and TRA CO_2 Accident Corrective Actions. Opportunities for improvement exist to better integrate training course content so that overlaps are minimized and to ensure that the Special Skills/Training identified in work orders matches training offered by the company (and that the training is included on Individual Training Plans). An example where overlap may be occurring is identification of the hazard communications training in addition to facility specific training on testing and maintenance of batteries. Additionally, Work Order 14562 specified Hand and Portable Tool Safety training as special training required for this particular job. While this training was listed in the TRAIN database, it had not been offered recently, and training personnel believed that most of the information was already covered in other training classes taken by the crafts.

Numerous opportunities exist within the training program for employees and staff to provide feedback and suggestions for improvement. Following one of the first sessions of the Third Quarter ES&H Training, a student exercised his "Stop Work Authority" as a result of problems he believed existed in the training and associated test regarding personal protective equipment. The problems were immediately evaluated and corrected to the satisfaction of the employee and management prior to presentation of the next class. Other examples of feedback mechanisms include the Training Improvement Proposal System (TIPS), Training Evaluation and Comment Forms (Form 361.49), Evaluation Summary Reports, Examination Trends (Form TRNG-35). The Training and Document Management Manager actively uses the company ICARE Process Deficiency Resolution Process to manage issues related to training of personnel at TRA.

Conclusion: The objective has been met.

Issue(s)

- None

Strength(s)

- Mature, well defined training program exists for operators at the ATR Reactor. (AMG2-1)

Inspector_____ Richard Dickson	**Team Leader**_____ Joseph Arango

Sub-Team: ATR	**FUNCTIONAL AREA: OP** **DATE**: September 14, 1999

OBJECTIVE: OP.1 An integrated process has been established and is utilized to effectively plan, authorize and execute the identified work for the facility or activity. (CE II-4)

Criteria

1. Procedures and/or mechanisms are in place and utilized to ensure that work planning is integrated at the individual maintenance or activity level, and work planning fully analyzes hazards and develops appropriate controls.

2. Procedures and/or mechanisms are in place and utilized which ensure that there is a process used to confirm that the facility or activity and the operational work force are in an adequate state of readiness prior to authorizing the performance of the work.

3. Procedures and/or mechanisms are in place and utilized which ensure that there is a process used to gain authorization to conduct operations.

4. Procedures and/or mechanisms are in place and utilized which ensure that safety requirements are integrated into work performance.

5. Procedures and/or mechanisms are in place and utilized which ensure that adequate performance measures and indicators, including safety performance measures are established for the work.

6. Workers actively participate in the work planning process.

Approach

Record Review: Review documents and/or mechanisms that govern the work control process for planning, authorizing, and conducting work such as STD-101 "Integrated Work Control Process," MCP-3562 "Hazard Identification, Analysis and Control for Operational Activities," MCP-3571 "Independent Hazard Review," PRD-5043 "Operational Safety Boards" and MCP-3480 "Environmental Aspect Evaluation and Maintenance." Review should assess the adequacy of the documents to meet the requirements listed above and determine that the maintenance and work control process is effectively integrated into the facility/activity procedures. In particular, note the integration of hazard identification and controls, (i.e. chemical, electrical, radiological, waste streams, environmental) into the work planning process. Review the adequacy of the division of responsibilities as defined by the governing procedure, worker involvement in all aspects of the activity, and work authorization process. Controls for individual work items or activities such as Job Hazards Analysis (JHA), Radiation Work Permits (RWP), Hazard Profile Screen Checklist (HPSC),

Work Control Forms (WCF), Confined Space Entry Permit, and operating procedures should also be evaluated.

NOTE: Although the ALARA Committee process will be reviewed by the Radiological Controls SME, a review of work control documents should be made to ensure the basic concepts of ALARA as well as any ALARA Committee recommendations are incorporated into the work control documentation.

Review the integration of subcontractor work control into the facility work control process. Evaluate the review of subcontractor work control documentation, the approval of the documentation, the authorization to conduct work and the oversight of subcontractor work in the facility.

Review the performance measures and performance indicators using the "INEEL Performance Measures and Trending Report," MCP-3521 Trending Center, self -assessments conducted in accordance with MCP-8 "LMITCO Self-Assessment Process for Continuous Improvement," or the Facility Excellence Program PDD-1011 "Facility Excellence Program." Determine if these tools provide information that is truly a direct indicator of how safely the work is being performed.

Review the process used to prepare Authorization Agreements, MCP-3567 "Authorization Agreements with Authorization Basis List" and TEM-2 "Template for Authorization Agreements with Authorization Basis List." Review the Authorization Agreements for the Advanced Test Reactor (ATR) and the Radioactive Waste Management Complex (RWMC) to determine if they are adequate, that they demonstrate effective integration, and that proper procedures were followed to prepare, review, and approve them.

Interviews: Interview personnel responsible for preparing, authorizing, performing, and measuring the performance of the work. This should include personnel such as those responsible for preparing and maintaining work control documents, hazard identification and control documents, the Plan of the Day (POD), equipment status files, pre-job briefings, and the conduct of facility or activity operations. Interview personnel responsible for individual activity procedures and controls (e.g. JHAs, RWPs, HPSCs, WCFs, etc.) Verify adequate worker involvement at each step of the process. Interview personnel responsible for the development and implementation of the self-assessment program including individuals who participate in self-assessments. Interview those individuals responsible for development, maintenance, and approval of the Authorization Agreement. Interview members of the management team charged with adherence to the requirements listed within the Authorization Agreement.

Observations: Observe the actual authorization and performance of work activities. Observe a plan of the day or plan-of-the-week meeting. Attend an Operational Safety Board (OSB) meeting or an Independent Hazard Review Group (IHRG) meeting with field verification that hazard controls specified by the hazards control documents are being implemented. Team members should observe the development of a maintenance work package as well as the field execution of a maintenance work package. Observation should include the pre-job brief,

authorization by the managers to proceed, command and control of the work, review of safety requirements, etc. Observe work hazard identification activities (e.g. JHAs, RWPs, etc.) and the application of MCP-3562 during an operational procedure walk-down and review. Observe worker involvement in these processes.

Record Review

- STD-101, Integrated Work Control Process, Rev. 1, 8/26/99
- MCP-3562, Hazard Identification, Analysis and Control for Operational Activities, Rev. 0, 7/31/99
- MCP-3571, Independent Hazard Review, Rev. 0, 3/1/99
- PRD-5043, Operational Safety Boards, Rev. 0, 8/2/99
- MCP-3480, Environmental Aspect Evaluation and Maintenance, Rev. 0, 8/19/99
- Performance Measures and Trending Report in Support of Operational Excellence, INEEL/EXT-99-00516, 6/99
- MCP-3521, Trending Center, Rev. 0, 3/1/99
- MCP-8, LMITCO Self-Assessment Process for Continuous Improvement, Rev. 3, 8/31/99
- PDD-1011, Facility Excellence Program, Rev. 0, 3/15/99
- MCP-3567, Authorization Agreements with Authorization Basis List, Rev.1, 8/30/99
- TEM-2, Template for Authorization Agreements with Authorization Basis List, Rev. 1, 8/30/99
- Authorization Agreements for ATR, ATRC, and NMIS, including currently approved version and the draft for the new M&O contractor
- Minutes of Meetings of the Operational Safety Board (OSB)
- ATR Facility Operations Safety Board (OSB) Agenda for 9/8/99
- TRA Corrective Action Review Board (CARB) Agenda for 9/7/99
- Job Safety Analysis (JSA) for Infrared Imaging of Built-up Roofs (Evening work)
- Interdepartmental communication (special control instruction) for MCP-3562 Implementation 9/2/99
- Completed MCP-3562 walkdown package for DOP 7.2.7, Reactor Outage, Revision 12, including JSA
- Self Assessment Program graphical status reports for ten ATR groups
- Recent self-assessment reports for ATR, ATRC, and NMIS
- Facility Excellence Program summary reports for ATR, ATRC, and NMIS
- Work control package
- TRA Daily Schedule
- Operations Daily Summary Report
- ATR Outage SWR Status Report
- ATR Performance Indicators for Incentive Nos. 1, 2, 3a, 4, 4b and 5
- Performance Indicator for TRA Safety Severity Index
- Electronic mail message from Richard Gurske to James VanVliet, et al., 9/10/99, with subject MCP-3480 NEPA Documentation
- Form 451.01, Rev. 07, 8/19/99 entitled Environmental Checklist
- Minutes of the TRA Manager's Environmental Status Meeting

- ATR Reactor Operator Retraining Schedule for Session # 10 (10-01-99 to 12-31-99)

Interviews Conducted

- ATR Operations Manager
- TRA Maintenance Manager
- TRAMO Planning and Scheduling Supervisor
- TRAMO Planner
- TRAMO Foreman
- ATRC/NMIS Facility Manager
- TRAMO Daily Work Coordinator (Meeting Chairman, Plan of the Day)
- TRAMO Staff (Self-assessment Coordinator)
- ATR Shift Supervisor
- TRA Engineering and Projects Supervisor (Acting)
- TRA Construction Management Supervisor
- TRA Environmental Supervisor
- Principal Office Specialist
- ATR TSR Coordinator
- TRA Corrective Action Review Board members
- TRA Operational Safety Board members
- MCP-3562 Procedure Walkdown Team for Departmental Operating Procedure (DOP) 7.1.7

Observations

- Plan of the Day (POD) Meetings (four)
- Operational Safety Board Meeting
- Corrective Action Review Board Meeting
- ATR Operations Manager Weekly Meeting
- Preparation of computer-generated Hazard Identification and Mitigation Checklist
- Preparation of computer-generated maintenance work control package
- Pre-job briefing for NR Make Up System demineralizer resin change
- Implementation of a maintenance work package to backflush plugged resin discharge piping
- Daily Foremen Status/Planning and Update Meeting (two)
- Operational evolution involving the cycling of the ATR Building Truck Lock Doors
- Tabletop review of DOP 7.1.7, Sr. Reactor Auxiliary Operator Pre-Startup Checklist per MCP-3562.
- Hazards identification walkdown of DOP 7.1.7 per MCP-3562
- Work package planning walkdown for modifications to ATR Irradiation Test Vehicle (ITV) Mass Flow Control Cabinet

Discussion of Results

Procedures governing the planning and development of maintenance work control packages were reviewed and observed in use by the responsible organizations. Individuals performing the required functions were knowledgeable and proficient in performance. A computerized software system, known as HIM (Hazard Identification and Mitigation,) was utilized effectively in the identification and control of hazards. Work packages are computer generated also through the Computerized Maintenance Management System (CMMS). However, the computer system has been experiencing instability on the contractor's Intranet. This instability has caused delays in work package preparation and attendant frustration with the user population. (AOP1-1) The issue has been brought to the attention of the INEEL Site Operations Director who is attempting to drive a timely resolution.

Because this version of the CMMS is relatively new to the INEEL and proficiency in the use of the system has not yet been mastered, the generation of model work orders for preventive maintenance (PM) has been cumbersome. This factor, coupled with other factors, such as the new STD-101 process and limited resources, may be contributing to the growing PM backlog. The TRAMO Planning and Scheduling Supervisor is expecting to have some 2000 model work orders in the system; however, only about 200 have actually been entered to date. ATR management is aware of the growing PM backlog and is prioritizing the work order generation accordingly.

Procedures also require the consideration of environmental compliance elements into work control packages. However, with the recent approval of some management control procedures, there was less than complete integration regarding how environmental considerations, specifically, categorical exclusions are addressed and documented for routine maintenance items. The contractor acknowledged the need to clarify expectations and issued interim guidance in the form of an electronic mail message until the necessary forms and procedures are revised. (AOP1-2)

Considerable discussion of work activities takes place at Plan of the Day (POD) Meetings, Daily Status Update Meetings, and the ATR Operations Manager Weekly Meeting. All meetings observed were well managed, informative and efficient. During ATR outages, another individual is assigned responsibility to serve as the Outage Manager. Generally, the ATR Facility Manager or his designee assumes this role. This person is authorized to make decisions regarding the application of all resources assigned to TRA such that the outage scope and schedule is tightly controlled. This approach allows timely decision making on all issues but, in particular, emerging issues. It also allows for timely coordination of required walkdowns. This concept has been in effect for about five years and has resulted in a dramatic and sustained improvement in operating efficiency for the ATR.

Although not specifically observed by the team, the Site Area Director conducts a weekly Environmental Status meeting each Monday, with representation from all departments. Based on a review of meeting agenda and minutes and discussions with the Environmental Support Supervisor, and the ATR Operations Manager, it is clear that there is a strong commitment to environmental protection and compliance. (AOP1-5)

A review of the "Test Reactor Area Maintenance Organization Roles and Responsibilities (DRAFT)" document indicates that the TRAMO Staff is responsible for, among other things, conducting the Plan of the Day (POD) Meeting. However, considering the role that was observed and the decision-making authorities apparently delegated to the POD chairman, the document lacks sufficient specificity. A similar observation was noted for the staff person responsible for coordinating the TRAMO self-assessment program. (AOP1-3)

The process for development, review and approval of maintenance work requires that work control packages be generated on the Computerized Maintenance Management System. The software ensures that essential hazards information and priorities are included in each package by prohibiting the author from proceeding without filling in the required code fields.

Procedures require the responsible job supervisor to conduct a workability walkdown prior to commencing work to ensure plant conditions and identified hazards and mitigation controls are still valid. Procedures also require that the job supervisor ensure that only employees who have documented completion of required training and are without medical restrictions are allowed to perform the activity.

The job supervisor is also required to conduct a pre-job briefing with all the assigned workers to communicate actual and reasonable potential hazards and the mitigative actions identified in the work package. The work force is obligated, by procedure, to inform the supervisor of any work restrictions imposed by the contractor's Occupational Medical Program or other defined medical program and if medication is being taken that could impact the safety of the workers or the public. The worker is also obliged, by procedure, to check that the equipment in the field matches the equipment in the work package. He is also required to assess whether the equipment, system or work area is in a safe condition (for example, lockout/tagout, zero energy check, adequate lighting, etc.) for the work activity to be accomplished safely.

Procedures require that the Operations Department review each work package for such things as authorization basis document limitations, lockout/tagout requirements, environmental support and so forth. Operations personnel are also required to participate in work package walkdowns. When the package is ready to be worked, the TRA Maintenance Organization delivers the package to the ATR Shift Supervisor who reviews the prerequisites specified in the package and ensures that they are met. The ATR Shift Supervisor authorizes the lockout/tagout to be established for the work activity. If already established, he ensures that the required lockout/tagouts are still in place.

Operational activities are similarly handled. Typically, the prerequisites are specified in a Detailed Operating Procedure and the ATR Shift Supervisor signs off the prerequisites to authorize commencement of the activity. If the activity cannot be completed in one shift, the ATR Operations Supervisor is required to sign off that the prerequisites have been met each shift. Procedures also require that a pre-job briefing be conducted for operational activities.

Procedures require that work package preparation include a review and identification of hazards through the use of a Facility Hazards List, a computerized listing generated by the

contractor through a room-by-room walkthrough of every INEEL facility. As work packages are generated, the Work Planner utilizes the Hazards Profile Screening Checklist, generated previously, and inserts mitigative control requirements into the work package. He validates the checklist through a walkdown with a team consisting of the Work Planner and others as specified by the Maintenance Planning and Scheduling Supervisor. Subject Matter Experts from the ES&H organization are typically included along with representatives from Engineering and Quality Assurance.

In order to attain consistency in the use of control requirements, the Work Planners within the TRA Maintenance Organization electronically "cut and paste" canned mitigation control statements from a listing called the "Planning Tool," which is continually updated by the Work Planners. While many mitigation statements are considered generic, not all identified hazards can use a canned mitigation statement. For example, work on a roof requires the generation of a separate Job Safety Analysis (JSA). The Work Planner then incorporates the mitigation control measures specified in the JSA directly into the work package. A required "workability walkdown" ensures that the conditions originally specified in the work package have not changed. The pre-job briefing also covers the hazards and associated mitigation controls. The ability of each and every employee to "stop work" is re-emphasized at the pre-job briefing, particularly if conditions have changed since the walkdown was completed, thereby requiring additional evaluation, or if previously unidentified hazards are discovered.

The procedure governing hazard identification, analysis and control of operational activities (MCP-3562), although only recently approved appears to be adequate. Execution of the procedure was observed on two Detailed Operating Procedures, DOP 4.9.2, Recharging of the Bulk Helium Storage System and DOP 7.1.7, Sr. Reactor Auxiliary Operator Pre-Startup Checklist. The Hazard Evaluation Group (HEG) conducted a tabletop discussion of the hazards of each step of the procedure, reviewed the Facility Hazards Lists for the areas where the work is to be accomplished, and walked down the steps of the procedure within the facility. The walkdown team was knowledgeable of MCP-3562 requirements; a briefing of the status of the process and products of the process was provided; the hazard evaluation was meaningful and thorough. The groups used company procedures and requirements to update the safety requirements to be utilized within the procedures. For instance, the group determined that because of the temperature of the Helium gas, the material should be treated as a cryogenic material and the PPE requirements of this procedure should be the same as those requirements identified in the Site level document for cryogenic material. This determination resulted in increasing the PPE requirements of the procedure. The process is useful and will lead to better and safer operational procedures.

The MCP-3562 process at ATR needs continued emphasis. To date, only six (6) operational procedures have completed the review and update process with the final set of procedures scheduled for completion in February 2002. The contractor is currently using one team to conduct the tabletop reviews and walkdowns but is attempting to organize a second team to complete the project faster. Based on a review of one of those six procedures, DOP 7.2.7, Reactor Outage, it was demonstrated that all hazard-mitigation controls specified in the Job Safety Analysis were properly transcribed into the operating procedure or otherwise institutionalized with one exception, which involves on-the-job (OJT) training. Both the

ATR operations group and the instructor responsible for training of ATR Equipment Operators agreed that additional action is warranted to institutionalize the OJT element identified in the JSA. As additional operating procedures have completed the review and update process, a method of institutionalizing JSA hazard controls not included with the procedure may become necessary. (AOP1-4)

Procedures require the preparation of a report designed to provide management with indicators and trends of the contractor's ESH&QA performance. The report, generated by the contractor's Independent Oversight and Trending (IOT) Group, is relatively new, having been initiated in fiscal year 1999 with five (5) reports issued since its inception. Despite having some fundamental philosophical differences with several elements that make up the performance measures, ATR management has actively reviewed the report to determine what follow up actions they can and should be taking. A management meeting has been scheduled between the ATR and IOT groups to determine how to resolve their differences and to make the performance measures report even more useful.

ATR performance is also measured in accordance with a contractually negotiated suite of incentives that have been in effect throughout the current contract. The incentives were designed to provide a balance among production, safety and new business development. The performance indicators for the negotiated incentives are prominently displayed at the entrance to the ATR Building. Based on discussions with ATR management, the incentives have been effective in driving behavior by allowing the entire ATR team to clearly understand what elements are most important to the Department.

Another key indicator is the Safety Severity Index, which is calculated as a ratio, based on the number and severity of injuries per man-hours worked. The smaller the index, the better the safety performance. The index for ATR is currently well below the established goal for FY1999, indicating exceptionally good performance.

A review of the contractor's self-assessment program at ATR, ATRC and NMIS was completed along with interviews of the respective coordinators. Indicators demonstrate that, although the program is very aggressive, most of the required and targeted assessments are being completed on time, with the primary exceptions being the ES&H group and the TRA Maintenance Organization. Nonetheless, the program has been effective in identifying the need for improvement in various areas and in ensuring adequate follow up. (See also AMG1 Assessment Form)

As discussed above, workers are actively involved in the work planning process from identification of a deficiency, through work package preparation, and through workability reviews. Workers and Subject Matter Experts, Engineering and QA staff participate in walkdowns during work package preparation to assist in identifying new hazards and to assist with suggestions on how the package can be made more workable.

Operators are currently involved with JSA integration into operating procedures by leading the walkdown teams. Workers are also given opportunity to express input or concerns at the pre-job meetings, which are held as required by procedures. Based on observation of a pre-job meeting and discussions with foremen, workers are afforded ample opportunity to speak

up if they have any safety concerns. Although not specifically observed by the ISMS Validation Team, a post-job briefing is required by procedure. Feedback from those meetings is factored into future work packages.

Conclusion

The objective has been met.

Issue(s)

- The software system used to generate work control packages has been unstable on the contractor's Intranet which causes delays in work package preparation. (AOP1-1)

- Environmental requirements, such as categorical exclusions for routine maintenance activities, are not fully integrated into procedures that control work. (AOP1-2)
- The TRAMO Roles and Responsibilities (DRAFT) document lacks specificity for the Plan of the Day Chairman and the Self-Assessment Coordinator. (AOP1-3)

- A method of institutionalizing JSA hazard controls not appropriate for inclusion within operating procedures needs to be addressed. (AOP1-4)

Strength(s)

- TRA management demonstrates a strong commitment to environmental protection and compliance with weekly environmental issues meetings chaired by the Site Area Director. (AOP1-5)

Inspector_____ Edward J. Ziemianski	**Team Leader**_____ Joseph Arango

Sub-Team: ATR	FUNCTIONAL AREA: SME.2 DATE: September 10, 1999

OBJECTIVE: SME.2 Within the configuration management subject area the planning and documentation of designs and modifications includes an integrated analysis of hazards, and development and specification of necessary controls. There is an adequate process for the authorization and control of design and a process for identifying opportunities for feedback and continuous improvement. Within the configuration management subject area, line managers are responsible for safety; clear roles and responsibilities have been established; and there is a satisfactory level of competence. (CE II-2, CE II-3, CE II-4, CE II-5, CE II-6)

Criteria:

1. Procedures and/or mechanisms for the configuration management subject area require adequate involvement of qualified individuals in the design process to ensure that hazards are analyzed and controls are established to mitigate or eliminate the hazards.

2. Procedures and/or mechanisms for the configuration management subject area contain clear roles and responsibilities. The configuration management subject area is effectively integrated with line support managers to ensure that line managers are responsible for safety.

3. Procedures and/or mechanisms for the configuration management subject area require controls to be implemented, that these controls are effectively integrated, and readiness is confirmed prior to performing work. Workers understand and are utilizing configuration management processes, where appropriate.

4. Procedures and/or mechanisms for the configuration management subject area require that personnel who are assigned to the configuration management subject area have a satisfactory level of competence.

5. Procedures and/or mechanisms for the configuration management subject area require that within the configuration management subject area feedback and continuous improvement results.

Approach

Record Review: Review the INEEL Configuration Management Program described in PLN-485, “Configuration Management Project Plan,” PRD-115, “Configuration Management” and STD-107, “Configuration Management Program.” Review associated MCPs located in Manual 10A. Review MCP-2811, “Design and Engineering Change Control,” MCP-3630, “Computer System Change Control,” MCP-3572, “System Design Descriptions,” MCP-3573, “Vendor Data Management” and MCP-2377, “Development, Assessment and

Maintenance of Drawings," to determine the adequacy of the facility/activity level configuration management processes at the INEEL. Review training records of personnel in the configuration management subject area to determine that they meet competency standards. Review the DOE directive that defines the DOE expectations for Configuration Management.

Interviews: Interview personnel and responsible managers in the configuration management subject area, both for the contractor and DOE. Interview line managers to assess the establishment of clear roles and responsibilities and the understanding of the configuration management support provided to line managers. Interview personnel assigned to the configuration management subject area to assess the level of competence.

Observations: Observe events such as the development of an Engineering Change Form (ECF), Computer System Change Form (CSCF), or Document Action Request (DAR) for a technical document. Observe as building of fire protection and life safety systems. Observe development of the facility design recovery plan.

Record Review

- The ATR/ATRC/NMIS facility roles and responsibilities including the engineering department
- Training records for Engineering & Project Management/Plant Systems Engineering staff
- Copies of 10 ECF packages for the most recent modifications performed on ATRC/ATR/NMIS
- USQ checklists and evaluations for ATR/ATRC/NMIS for 1999
- SAR/TSR implementation plan for TRA
- PLN-485, Configuration Management Project Plan
- PRD-115, Configuration Management
- STD-101, Integrated Work Control
- STD-107, Configuration Management Program
- EDF TRA-ATR-1440, Configuration Management Plan for Experiment Distributed Control Systems, 5/20/99
- Manual 10A
- MCP-2811, Design and Engineering Change Control
- MCP-3630, Computer System Change Control
- MCP-3572, System Design Descriptions
- MCP-3573, Vendor Data Management
- MCP-2377, Development, Assessment and Maintenance of Drawings

Interviews Conducted

- Reactor Programs Engineering Manager
- Plant Systems Engineering Manager
- ATRC Operations Supervisor
- NMIS Operations Supervisor

- Nuclear Engineering Manager
- ATR Experiments Project Manager
- ATR Diesel Systems Primary Owner
- ATR LOCS Software Primary Owner
- Reactor Programs QA Supervisor
- Engineering Project Specialist
- NMIS SNM Custodian
- Site Operations, Criticality Safety Specialist
- Site Operations, Maintenance Manager
- Configuration Management Project Manager
- ATR Operations Supervisor
- Chairman, Safety Oversight Review Committee

Observations

- ATR Operational Safety Board
- NMIS Walkdown
- ATR Walkdown
- Engineering Change Form Execution
- Site Maintenance Management Council (SMMC)

Discussion of Results

The procedures governing configuration management at the ATR/ATRC/NMIS are reviewed and cross-checked with the individuals executing the procedures at the facilities. Those people who executed the procedures are qualified to perform the functions that are required. Individual qualifications are based on fundamental requirements for the position (engineers and position descriptions), training provided on company procedures and processes, and training provided on facility specific requirements (Safety Analysis Reports, Unreviewed Safety Questions, and facility systems).

The facility plant/experiments systems engineers are the primary staff for the execution and control of configuration management. A draft qualification checklist was under development for the systems engineers but had not yet been implemented. The level of understanding of facility hazards was discussed with the systems engineers and their knowledge of the facility safety analysis reports was very good and they had received company training for this. The plant systems engineers are also USQ trained.

The procedures for configuration management require that the facility manager identify major systems, evaluate personnel resources, assign primary owners, train primary owners, and document system assignments. The facility manager for the ATR/ATRC/NMIS ensured that these components have been completed. The systems are identified in the facility SARs and Q-lists and developed by the ESH&QA and engineering support organizations. The support organization managers who also assigned personnel to be primary owners determine the personnel resources. The authority to assign primary owners was delegated by the facility

manager to the ATR/ATRC/NMIS engineering managers. An issue existed that primary owners had not been designated for the ATRC and NMIS. However, the Facility Supervisor had been following the primary configuration management procedures by using the engineering department as temporary primary owners. A copy of a letter to the facility manager that formally assigned primary owners to the ATRC and NMIS was provided to the reviewer closing this issue. The primary owners have been provided training on the Integrated Work Control Process. The knowledge and understanding by the system engineers make their assignment as primary owners a notable strength of the ATR configuration management program. (ASME2-1)

Discussions were held with the facility manager and supervisor who readily acknowledged their ownership and responsibility for configuration management in these facilities. Support managers have been effectively integrated with line management.

Controls are implemented primarily in the form of procedures. The facilities technical safety requirements and operational safety requirements also implement configuration management controls. The engineering change form (ECF) and computer system change form (CCF) manages the procedural controls. These processes are also implemented by LMITCO's integrated work control process. A review of recently closed ECF's indicated that qualified individuals have observed the specified procedural controls. Interviews were conducted with system primary owners and they understood the configuration management procedures.

The configuration status of the ATR, ATRC, and NMIS is reviewed each operating cycle of the ATR. All open assessment input forms, non-conformance reports, engineering change forms are reviewed and their status acknowledged by the facility manager before the ATR is started up. This happens at least three or four times a year. A complete review of open ECF's has been conducted and the ECF backlog for TRA has decreased from 398 to 164 and the reasons for the open ECF's has been acknowledged.

As stated above, the personnel who have configuration management responsibility have a satisfactory level of knowledge as demonstrated by interviews, training records, qualification and job performance. The primary owners knowledge of the existing authorization basis for these facilities is very good as demonstrated during the interview process.

Many feedback and improvement processes were identified associated with the configuration management process. These included a strong formal self-assessment managed by the Chairman, Safety Oversight Review Committee (SORC). These self-assessment process evaluated mechanisms such as the effectiveness of the USQ and NCR processes as planned and scheduled. Other processes included the QA process and use of non-conformance reports and assessment input forms and tracking of these deficiencies to closure.

All new ECF's and CCF's are also informally reviewed independently within the engineering group where inaccuracies and inconsistencies are corrected. Observation of the ATR Operational Safety Board (OSB) indicated the consideration of items such as ECF training and ATRC safety basis training and identified issues which are tracked in the minutes as are commitments made to resolve these issues before the next OSB meeting.

Conclusion*:* The objective has been met.

Issue(s):

- None

Strength(s):

- The use of qualified plant/experiments system engineers as primary owners was a real strength of the configuration management process at the ATR/ATRC/NMIS. (ASME2-1)

Inspector_____ Terry W Smith	**Team Leader**_____ Joseph Arango

Sub-Team: IRC/Big Shop	FUNCTIONAL AREA: DOE DATE: September 20, 1999

OBJECTIVE: DOE.1 DOE procedures and mechanisms are established to help ensure that hazards are analyzed; controls are developed; work is formally and appropriately authorized and performed safely; and feedback and improvement programs are in place and effective. DOE line managers are using these processes effectively, consistent with FRAM and FRA requirements, and are involved in the review of safety issues and concerns and have an active role in authorizing and approving work and operations. (CE II-7, CE II-8)

Criteria:

10. DOE procedures and/or mechanisms are in place that establishes a process for confirming readiness and authorizing operations.

11. DOE procedures and/or mechanisms are established to help ensure that the safety management system is properly implemented and line management oversight of the contractor's worker, public, environment, and facility protection programs is performed.

12. DOE procedures and/or mechanisms require day-to-day operational oversight of contractor activities through Facility Representatives.

13. DOE procedures and/or mechanisms are established to help ensure the implementation of quality assurance programs and ensure that contractors implement quality assurance programs.

14. DOE procedures and/or mechanisms are in place to help ensure that the contractor's hazard analysis covers the hazards associated with the work and are sufficient for selecting standards.

15. DOE procedures and/or mechanisms are in place in which DOE directs the contractor to propose facility or activity-specific standards tailored to the work and the hazards. DOE procedures require that appropriate safety requirements in necessary functional areas are included in contracts.

16. DOE procedures and/or mechanisms are in place that direct DOE line manager oversight to ensure that implementation of hazards mitigation programs and controls are established.

17. DOE procedures and/or mechanisms are in place that direct the preparation of the authorization basis documentation and oversee the implementation by the

contractor. Procedures for development, review, approval, maintenance, and utilization of Authorization Agreements are implemented.

18. DOE procedures and/or mechanisms require that contractors develop a lessons-learned program and monitor its implementation. A process is established for reviewing occurrence reports and approving proposed corrective action reports. A DOE process is established and effectively implemented to continuously improve efficiency and quality of operations. Corrective actions are developed, implemented, and tracked in order to profit from prior experience and the lessons learned. DOE provides effective line oversight of the contractor's self-assessment programs.

Approach

NOTE: In general, ID direction to the contractor to carry out DOE requirements is through List A and List B of contract DE-AC07-94ID13223, including associated contract modifications. Review of contract DE-AC07-94ID13223 should provide proof that ID has directed the contractor to implement many of the criteria stated above. Additionally, ID has written an ID ISMS Description Document, ID Guide 450.X-X, which explains the DOE-ID ISMS. Review of ID Guide 450.X-X should provide information on how ID implements its ISM system, and how ID activities integrate with those of LMITCO. The following Record Review section highlights specific ID Notices tailored to the criteria above.

Record Review: Review ID Notice 411.1, "DOE Integrated Safety Management Functions, Responsibilities and Authorities" to verify that line management is responsible for safety, and that their responsibility is clearly defined in roles and responsibilities. Review ID Notice 425.1, "Startup and Restart of Nuclear Facilities" to determine if a process for confirming readiness and authorizing operations is in place, and review documentation from a startup or restart review to determine the adequacy of implementation. Review ID Notice 450.A3,"Environment, Safety, Health and Quality Assurance Oversight" and ID Order 220.X, "Independent Assessment" and sample select surveillance reports to determine if mechanisms are established to help ensure line management performs oversight of the contractor's ISMS, (specifically including hazard mitigation programs and controls, and self-assessment programs) to verify protection of workers, public, and the environment. Review the Quarterly Oversight Schedule to determine if the oversight is balanced with risk and priority of mission. Review Facility Representative Position Descriptions and Performance Agreements to determine if mechanisms are in place to require day to day operational oversight by FRs. Review ID Order 414.1, "Quality Assurance Program" and individual ID AM organization Quality Program Plans (QPPs) to determine if they help ensure the implementation of quality assurance program by ID and LMITCO. Review ID Notice 420.A1, "Safety Basis Review and Approval Process" to determine if this mechanism directs the preparation of authorization basis documentation, helps ensure that the contractor's hazard analysis covers the hazards associated with the work, and is sufficient for directing the selection of standards tailored to the facility work and

hazards. Review ID Notice 450.C, "Authorization Agreements" to determine if it is sufficient to direct the development, review, approval, maintenance and utilization of Authorization Agreements. Review facility Authorization Agreement(s) to determine if ID Notice 450.C was properly implemented. Review the approved and in process facility hazards analysis documentation to verify that contractor procedures and mechanisms have been properly reviewed and approved. Review ID Order 210.X, "DOE-ID Performance Measure, Trend Analysis, and Communications" to determine if this mechanism requires contractors to develop a lessons-learned program and monitor its implementation. Review ID Order 410.A, "DOE-ID Issue Management" to determine if ID has a process to ensure corrective actions are developed, implemented, and tracked. Review the results of the implementation of ID Order 410.A to evaluate adequacy of implementation to continuously improve efficiency and quality of operations. Review ID O 220.X, "DOE-ID Self-Assessment" to determine the adequacy of the ID management self-assessment program.

Interviews: Interview the Facility Director and Site Area Director and discuss work authorization and performance to determine if there are adequate mechanisms to ensure that work is properly authorized at all levels. Determine if worker safety is perceived as an integral part of the work authorization process and that workers are involved in issue resolution if appropriate. Interview DOE and Contractor Line Management personnel at all levels and discuss the oversight programs. Discuss the Facility Representative (FR) programs with facility representatives and contractor personnel to determine if the FR program is effective. Discuss oversight and assessment programs with DOE staff from the Facility, Operational Safety Division, Environmental Programs and Settlement Agreement Division, and the Policy and Assurance Division who perform ES&H management and supervision assignments. During interviews, verify understanding of line management responsibility for safety and understanding of clear roles and responsibilities. Interview Facility Director, Facility Engineer(s), and Operational Safety Division Director to discuss the review and approval of the results of the contractor's identification, analysis, and categorization of hazards to assess their understanding of the procedures and the underlying principles and requirements. Interview Facility Director, Facility Engineer(s), and Operational Safety Division Director to discuss the review and approval of the standard selection process including the approval of the authorization protocols and agreements. Interview DOE personnel responsible for administering the issues management program and those DOE line managers who provide oversight of the contractor's self-assessment programs. Interview DOE-ID management personnel responsible for the DOE-ID management self-assessment program.

Observations: Observe selected facility representative and DOE staff oversight activities. Observe conformance to ID N 450.A3,"Environment, Safety, Health and Quality Assurance Oversight." Observe the review of Occurrence Reports by Facility Representatives to assess conformance to DOE Order 232.1, "Occurrence Reporting and Processing of Operations Information." Observe the weekly Facility Director Conference Call, Facility Director staff meetings, and interface with the contractor (e.g.

performance monitor meetings) to determine line management understanding and awareness of operational activities.

Record Review

- ID G 450.E-1, DOE Idaho Operations Office (DOE-ID) Integrated Safety Management System Guide, 8/4/99
- ID Order 120.A, General Business Planning Alignment, 8/19/99
- ID Manual 120.X-1, General Business Planning Alignment, 9/8/99 draft
- ID Order 414.1, Quality Assurance, 7/26/99
- ID Order 220.B, Independent Assessment, 9/10/99
- ID Order 450.A, Line Environment, Safety, Health and Quality Assurance Oversight, 9/27/99
- ID O 210.A, DOE-ID Performance Measure, Trend Analysis and Communication, 8/27/99
- ESH Schedule, FY99
- Fleet MCP-3735, Fleet Operations Roles and Responsibilities, Rev. 0 (effective date TBD)
- PDD-1025, Fleet Operations Training, Rev. 0, 8/23/99
- Sample JSAs
- MCP-3562, Hazard Identification, Analysis and Control of Operational Activities, Rev. 0, 7/31/99
- Facility Hazards List, CFA-696 CFA Transportation Complex
- Fleet Standard 1094, Mobile Fleet Maintenance, Rev. 0 draft B (effective date TBD)
- Fleet Standard 1095, Bus Operations, Rev. 0 draft B (effective date TBD)
- MCP-3640, Central Facilities Area Operations Information Roles and Responsibilities, Rev. 0, 8/26/99
- Big Shop Quality Assurance Program Plan
- MCP 2668, Planning Preparation Guidance, draft
- Big Shop ISMS Phase 2 Implementation WBS (status), 8/18/99
- CFT-1999-xx, various Activity, Detailed Report, Surveillances
- OPE M 410.C-1, Appendix A, OPE Quality Assurance Program Plan, 8/10/99
- LD M 410.E-1, Laboratory Development Research Excellence Manual, 7/30/99
- MOU Between LD and OPE – (LD-96-496), 12/5/96
- MOU between OLD and OPE (draft, undated)
- ERA-HC-93-02-IRC, INEL Research Center Laboratories Hazard Classification, Rev. 2, 9/95
- DOE-ID Oversight Reports, General Surveillances, IRC-1999-1 through IRC-1999-13
- Conduct of Operations Matrix, IRC
- MCP 3571, Independent Hazard Review
- PDD-1015, AEDL Research Laboratory Operations
- MCP-3652, Roles and Responsibilities of Idaho Falls Tenants, 9/13/99
- PDD-1005, Site Operations Manual

- Facility Hazards List, IRC
- A “legacy IHR” and a current IHR

Interviews Conducted

- DOE-ID Deputy AM, Office of Program Execution
- DOE-ID Facility Director, Big Shop
- DOE-ID Facility Engineer, Big Shop
- DOE-ID Facility Representative, Big Shop
- DOE-ID Deputy SAD, CFA
- LMITCO Fleet Operations Manager, Big Shop
- LMITCO Compliance Coordinator, Big Shop
- LMITCO Safety Engineer, Big Shop
- DOE-ID Assistant Manager, Office of Laboratory Development
- DOE-ID Program Director, Mission Management
- DOE-ID 2 Program Directors with IRC programs, Office of Laboratory Development
- LMITCO Program Controls Department Manager
- LMITCO Deputy Director, Safety and Health
- DOE-ID Facility Director, Facility Engineer, Facility Rep (building and services), IRC
- DOE-ID Facility Representative (laboratory operations), IRC
- DOE-ID Program Director, Operational Safety, Office of Program Execution
- DOE-ID Director for Program Planning and Evaluation, Office of Program Execution
- LMITCO Idaho Falls Laboratories SAD, Director of Laboratory Operations
- LMITCO Idaho Falls Facilities SAD
- LMITCO IRC Facility Manager
- LMITCO Lab Operations ES&H Manager
- LMITCO Independent Hazard Review Group Chair
- LMITCO Lab Custodian
- LMITCO Principal Investigator for IRC projects

Observations

- Big Shop POD
- Big Shop OSB meeting
- CFA POD
- Big Shop Work Group Meeting
- Management Oversight (SSW)
- IHR meeting
- IHR POD (craft)

Discussion of Results

Many of the DOE-ID procedures and mechanisms for ISMS implementation regarding the core functions oversight have been recently developed. However, they are, for the most part, documenting pre-existing processes, with refinements. Interviews and observations provide evidence that DOE oversight for the five core functions of ISMS is being effectively implemented at the Big Shop.

The contractor has in development a process and procedures for assessing the impacts of budget reductions on the core ES&H infrastructure. This was as a result of a judgment of need after the accident at TRA, and DOE-ID participated in the definition of the approach to the issue. MCP-2668, Planning Preparation Guidance, has been developed which implements an Infrastructure Committee and a process to perform risk assessments of proposed changes to the core infrastructure. This process has been exercised at TRA, and not yet at the balance of the site, but it is planned to do so over the next few months. The development of this process is regarded as a strength, and benefits are expected upon eventual full implementation. (IDOE1-4)

The ES&H infrastructure process has evidently not been completely briefed to all affected personnel, either on the contractor or DOE-ID side. This is a process of real potential value. For example, there is a concern that the configuration management program planned for the CFA may be under-resourced, considering the schedule, which is to be complete by April 2000. The Planning Preparation process could assess the seriousness of this situation. Because the process is so new, some DOE-ID personnel who are involved in resource allocation and the impacts of budget shortfalls are unaware of the process, even though it was developed with DOE-ID participation. Current plans for FY 2000 are to involve DOE-ID ES&H subject matter experts (SMEs) and program managers, and should also involve Facility Directors, Facility Engineers, and Facility Representatives. There is a lack of a DOE-ID procedure corresponding to the contractor's ES&H infrastructure program that would define the level of DOE-ID functional involvement in the process. It is recommended that DOE-ID procedures be updated to effectively interface with the contractor procedure, and that it includes participation of all DOE-ID work package managers including personnel directly responsible for facility operations. (IDOE1-1)

It is apparent that the DOE-ID – Big Shop contractor operations interface is working well and that line management responsibility for safety is being effectively implemented. There is active involvement and presence of the Facility Director and Facility Representatives at the Big Shop. The positive attitude on the parts of both the DOE-ID and the contractor regarding the implementation and benefits of ISMS is a strength for its continuing effectiveness at the Big Shop. (IDOE1-5)

The INEEL Research Center (IRC) is a sophisticated complex of research laboratories with a variety of potentially hazardous (primarily to researchers) activities being conducted within its confines. The hazards of IRC have been categorized as "routinely accepted by the public," but this classification does not communicate effectively the

hazards to which the researchers are exposed. In such an environment, it is necessary that the core functions of ISMS be effectively implemented. Because of the categorization of the facility, safety reviews and approvals of new or modified research activities are entirely within the purview of the contractor. That is, unless new activities threatened the facility categorization,
DOE-ID review and approval of the safety aspects of the activities is not required.

DOE-ID's roles are primarily in the areas of program management of the research (budget, scope, schedule, and quality of research products) and ES&H oversight. The Office of Laboratory Development (LD) and the Office of Program Execution, Facility Operations (OPE) have divided responsibilities in these areas via a memorandum of understanding (MOU). In terms of the core functions of ISMS, LD is responsible for defining the scope of work and feedback and improvement. OPE is responsible for overseeing the functions of analyzing hazards, developing and implementing hazard controls, and the performance of work within the controls. LD has program managers who oversee their functions, and OPE has the functions of Facility Director, Facility Engineer, Facility Representative, and the ES&H Oversight SMEs to see to their responsibilities.

This split of DOE-ID responsibilities with respect to IRC is not unlike that within OPE between Operations and Programs. However, within OPE, sometimes one individual has both the functions of Facility Director and Program Manager such as at ATR, and in any case, both functions report to the same Assistant Manager. In the case of IRC, because of the organizational split, the interface between oversight of the core functions is primarily accomplished through attendance of the Facility Director/ Facility Representative at periodic staff meetings of LD program managers.

Through interviews, it is apparent that there is a high degree of dependence by LD management and program managers on OPE for their oversight functions. Researchers report that they have little, if any, direct contact with the program managers responsible for their work. Interfacing between LD and IRC, other than the staff meetings mentioned previously, is primarily on the Program Director (LD) to the Department Manager level. Program managers seldom, if ever, attend Independent Hazard Review Group (IHRG) safety reviews of projects at IRC for which they are responsible, and their presence within the laboratories to directly interface with Principle Investigators is variable, but mostly characterized as not happening. In this context, there is a concern that the integration of safety into management functions, such as effective planning and budgeting, while considering ES&H aspects is less than optimum. LD management is aware of this weakness regarding implementation of ISMS core functions and guiding principles (line management responsibility for safety) and is planning to strengthen their involvement with OPE in effectively coordinating DOE-ID oversight functions through greater facility presence of program managers and awareness of ES&H issues. This is planned to be accomplished through development of procedures associated with the Laboratory Development Research Excellence Manual. However, these procedures are in an early stage of development. LD's Senior Safety Officer estimates that it will probably take a year to complete, and some time to train and effectively implement, so

a judgment as to its effectiveness cannot be made at this time. Therefore, it is an issue that LD needs to enhance their involvement in the operations related functions of ISMS. (IDOE1-2)

Operational oversight is accomplished through the activities of the Facility Director, Facility Engineer, and the Facility Representatives (one for facility operations for IFF and one for site laboratory operations), primarily. In the case of IRC, these three functions are being accomplished by two individuals, one of whom is currently in the qualifying process for Facility Representative (laboratory operations). However, he will be the Laboratories Facility Representative for the whole site, which includes on the order of 200 laboratories. Because of the multitude and variety of research projects going on within the IRC complex, and the concentration of responsibilities for DOE-ID oversight (multiple assignments for both individuals involved), the level of oversight provided by OPE at IRC is not comparable to that at other INEEL facilities. This is apparent through interviews and also the documentation of the ES&H Oversight Schedule. It is recommended that both LD and OPE work together to increase the level and effectiveness of DOE-ID operational oversight of IRC. (IDOE1-3)

Conclusion: The objective has been met. DOE-ID organization has implemented ISMS to execute their responsibilities. While at IRC some procedures are being improved or even developed, there are existing agreements and procedures to address the functions.

Issue(s)

- DOE-ID procedures and training have not yet incorporated an effective interface with the Planning Preparation Process developed by the contractor in cooperation with DOE-ID to consider ES&H implications of budget reductions in making final budget decisions. (IDOE1-1)

- DOE-ID, LD has not completed procedures for their LD Research Excellence Manual to strengthen their involvement with OPE in coordinating effective and integrated ISMS oversight of IRC operations. (IDOE1-2)

- DOE-ID, OPE level of oversight of IRC operations is not comparable to that provided at other INEEL facilities, and OPE and LD need to work together to increase the level and effectiveness as LD develops its Research Excellence Manual procedures. (IDOE1-3)

Strength(s)

- DOE-ID and the contractor have developed a process (Planning Preparation Process) to assure that the impacts of budget reductions on the ES&H infrastructure are understood and considered in making budget decisions. (IDOE1-4)

- Both DOE-ID and Big Shop management and staff demonstrated a positive attitude towards implementing ISMS and a strong sense of responsibility for safety. (IDOE1-5)

Inspector_____ Richard W. Englehart	**Team Leader**_____ Joseph Arango

Sub-Team: IRC/Big Shop	**FUNCTIONAL AREA: HAZ** **DATE**: September 21, 1999

OBJECTIVE: HAZ.1 The full spectrum of hazards associated with the Scope of Work is identified, analyzed, and categorized. Those individuals responsible for the analysis of the environmental, health and safety, and worker protection hazards are integrated with personnel assigned to analyze the processes. An integrated process has been established and is utilized to develop controls that mitigate the identified hazards present within a facility or activity. The set of controls are used to ensure adequate protection of the public, worker, and the environment and are established as agreed upon by DOE. These mechanisms demonstrate integration, which merge together at the workplace. (CE II-2, CE II-3)

Criteria

8. Procedures and/or mechanisms are in place and utilized by personnel to ensure hazards associated with the work throughout the facility have been identified and analyzed. The resulting documentation is defined, complete, and meets DOE expectations. The execution of these mechanisms ensure personnel responsible for the analysis of environmental, health and safety concerns are integrated with those assigned to analyze the hazards for the facility or activity. The use of these mechanisms ensure direction and approval from line management and integration of the requirements.

9. Procedures and/or mechanisms are in place and utilized by personnel that describe the interfaces, roles and responsibilities of those personnel who identify and analyze the hazards of the scope of work. Personnel assigned to accomplish those roles are competent to execute those responsibilities.

10. Procedures and/or mechanisms are in place to develop, review, approve and maintain current all elements of the facility Authorization Basis Documentation with an integrated workforce.

11. Procedures and/or mechanisms that identify and implement appropriate controls for hazards mitigation within the facility or activity are developed and utilized by workers and approved by line managers. These procedures/mechanisms reflect the set of safety requirements agreed to by DOE.

12. Standards and requirements are appropriately tailored to the hazards.

13. Procedures and/or mechanisms are in place to develop, maintain, and utilize Authorization Agreements.

14. Procedures and/or mechanisms are in place to effectively and accurately implement all aspects of the Authorization Basis.

Approach

Record Review: Review the documents that govern the conduct, review, and approval of facility hazard analysis such as Technical Safety Requirements MCP-2450 “Technical Safety Requirements”, Fire Hazards Analysis (FHA) MCP-579 “Fire Hazards Analysis”, Criticality Safety Evaluation (CSE) PRD-112 “Criticality Safety Program Requirements”, Safety Analysis PDD-22 “Safety Analysis” and PRD-164 ”Safety Analysis for Non-Nuclear, Radiological, and Other Industrial Facilities”, and MCP-3680 “Environmental Aspect Evaluation and Maintenance” (EAE) to verify that these documents conform to the hazard analysis requirements. Review a sample of hazard control documents to verify safety controls are provided for the hazards identified and that the control strategy encompasses a hierarchy of 1) hazard elimination, 2) engineering controls, 3) administrative controls, and 4) personnel protective equipment. Typical documents include Preliminary Hazards Review (PHR), Preliminary Safety Analysis (PSAR), Safety Analysis Reports (SARs), Technical Safety Requirements (TSRs), Health and Safety Plans (HASPs), Auditable Safety Analysis (ASA), Fire Hazards Analysis (FHA), Criticality Safety Evaluation (CSE), etc. Review procedures and perform field verification for activities/processes such as STD-101 “Integrated Work Control Process,” Radiological Work Permits (MCP-7 “Radiological Work Permit”), operations procedures (such as MCP-3480 “Environmental Instructions for Facilities, Processes, Materials, and Equipment), Hazards Identification and Control documents (MCP-3562 “Hazards Identification and Control of Operational Activities” or MCP-3571 “Independent Hazard Review”) to ensure accurate and effective implementation of Authorization Basis documentation requirements. For nuclear facilities, the respective Authorization Agreement describes facility management processes and procedures required for safe operation of the facility. The Unreviewed Safety Question process, described in MCP-123, “Unreviewed Safety Questions,” is used to ensure activities remain within the facility safety envelope. Where appropriate, review the process used to resolve Unreviewed Safety Questions (USQs) to ensure new tasks are being evaluated against the approved authorization basis as required by MCP-123, “Unreviewed Safety Questions.” Review completed or in progress implementation documentation.

Interviews: Interview personnel responsible for the identification and analysis of work hazards including personnel responsible for ALARA review requirements. In nuclear facilities, for example, this should include personnel responsible for USQ determination, procedure technical reviews, etc. Interview personnel responsible for developing and implementing hazard controls and/or Authorization Basis Documentation at the facility level. This should include personnel such as those responsible for SAR/TSR, FHA, CSE, and EAE preparations and implementation.

Observations: If possible, observe the actual preparation and field implementation of the analysis of hazards. In nuclear facilities, this should include an Unreviewed Safety Question Determination (USQD), preparation of a JHA, SAR/TSR, or Criticality

Safety Evaluation, etc. Observe the actual processes development, review, approval, and implementation of SAR/TSR, AA, and other Authorization Basis Documents as available. Where appropriate, observe that new tasks are being evaluated to determine if the tasks fall within the safety envelope described in the approved authorization basis as required by MCP-123, "Unreviewed Safety Questions."

Record Review

- DOE/EA-0845, Environmental Assessment for Expansion of the Idaho National Engineering Laboratory Research Center, Rev. 0, March 1994
- MCP-3571, Independent Hazard Review, Rev. 0, 3/1/99
- PDD-1015, AEDL Research Laboratory Operations, Rev. 0, dated 5/1/99
- ERA-HC-93-02-IRC, Applied Engineering and Development Laboratory INEL Research Center Laboratories Hazard Classification, Rev. 2, September 1995
- Several examples of completed independent hazard review packages
- Several examples of monthly IRC Facility Manager Monthly letters to laboratory custodians and laboratory managers
- Listing of active and inactive independent review packages
- Draft revision to MCP-3571, Independent Hazard Review, TBD
- MCP-137, Radioactive Source Accountability and Control, Rev. 4, 8/15/98
- OPE-IRC-99-13, Letter to File from J. B. Malmo regarding Hazard Classification for the IRC, 8/24/99
- MCP-3635, Chemical Hygiene Plan, Rev. 0, 7/15/99
- LST-23, LMITCO Conduct of Operations Conformance Matrix for Applied Engineering and Development Laboratories, Rev. 1, 6/5/97
- MCP-3636, Chemical Ordering, Receiving, Storing, Distributing and Disposing, Rev. 0, 7/12/99
- 1999 LMITCO ES&H Surveillance Reports and Unusual Occurrence Reports for IRC Labs
- MCP-2451, Safety Analyses for Other Than Nuclear Facilities, Rev. 1, 9/2/99
- MCP-3567, Authorization Agreement with Authorization Basis List, Rev. 1, 8/30/99
- MCP-3480, Environmental Instructions for Facilities, Processes, Materials, and Equipment, Rev. 0, 8/19/99
- PRD-5042, Facility Hazards Identification, Rev. 1, 8/30/99
- MCP-579, Performing Fire Hazards Analyses, Rev. 3, 8/31/99
- MCP-3680, Environmental Aspects Evaluation and Maintenance, Rev. 0, 9/3/99
- MCP-3591, Maintenance and Use of Facility Hazards Lists, Rev. 0, 8/30/99
- MCP-2451, Safety Analyses for Other Than Nuclear Facilities, Rev. 1, 9/2/99
- MCP-3567, Authorization Agreement with Authorization Basis List, Rev. 1, 8/30/99
- HAD-56, Central Facilities Area Hazards Assessment Document for the Transportation Complex, Rev. 0, September 1999
- HAD-23, CFA-696 Transportation Complex Fire Hazards Analysis, Rev. 0, 3/20/98

- Big Shop Facility Hazards List
- STD-1094, Mobile Fleet Maintenance, Rev. 0 Draft B, TBD
- STD-1095, Bus Operations, Rev. 0 Draft A, TBD
- MCP-39, INEEL Fleet Operations, Rev. 0, 1/26/98
- Big Shop Functional Task Matrix
- ID-LITC-FLEET-1997-0001, Unusual Occurrence Report
- 1999 DOE-ID Oversight Reports for the Big Shop
- Various Big Shop Exposure Assessments
- MCP-3735, Fleet Operations Roles and Responsibilities, Rev. 0, 9/13/99
- PRD-199, LMITCO Fire Protection Program, Rev. 0, 3/15/99

Interviews Conducted

- IRC Facility Manager
- IRC Director of Laboratory Operations
- IRC Independent Hazard Review Group Chairmen
- IRC Laboratory Custodians
- IRC Laboratory Managers
- IRC Work Organization Managers
- IRC Principal Investigators
- DOE-ID IRC Laboratory Facility Representative
- DOE-ID IRC Facility Manager
- IRC Industrial Safety Professional
- IRC Industrial Hygiene Professional
- IRC Fire Protection Engineer
- IRC Environmental Engineer
- IRC Chemical Storage Facility Manager
- IRC National Security Laboratories Advisory Scientists
- IRC Chemical Management Coordinator
- Big Shop Industrial Hygienist
- Big Shop Industrial Safety Professional
- Big Shop Fire Protection Engineer
- Big Shop Environmental Engineer
- Big Shop Facility Manager
- Big Shop Life Safety Systems Maintenance Personnel (2)
- DOE-ID CFA Facility Director
- Big Shop Propane Dispensing Operator
- Big Shop Fleet Environmental Coordinator

Observations

- IRC Independent Hazard Review Group Meeting
- Various laboratory activities at IRC
- Big Shop building walk-through to observe activities in progress

Discussion of Results

This review found that mechanisms are in place and utilized by personnel to ensure hazards associated with work throughout the IRC have been identified and analyzed. PDD-1015, AEDL Research Laboratory Operations, is in place which requires that all laboratory research activities are reviewed for ES&H hazards and that appropriate mitigation of these hazards is realized. MCP 3571, Independent Hazard Review, further implements this process by detailing the processes which are to take place to ensure research activities are conducted in accordance with applicable ES&H requirements and within the hazard envelope established for the IRC. Laboratory users (principal investigators) develop documentation which details (1) the scope of the proposed activity, (2) an evaluation of ES&H hazards, and (3) actions necessary to mitigate the hazards. This documentation is developed prior to initiation of any research activity, and utilizes support from ES&H professionals as needed.

Once the documented hazard review is completed, the package is submitted to an Independent Hazard Review Group (IHRG) for a formal review. This group is chaired by a senior researcher who is organizationally independent from the proposed activity and includes ES&H personnel with expertise in the fields of industrial safety, industrial hygiene, environmental compliance, fire protection and others as appropriate. ES&H personnel on the IHRG are typically not independent reviewers, but are the same personnel utilized during the development of the hazards review and mitigation activities. Such an approach is not as comprehensive as that of complete independence, but is not judged by this review as unduly hindering the effectiveness of the review process at the IRC. Procedures require that walkthroughs of the laboratory spaces are to be performed if the IHRG is not familiar with the lab to ensure interaction with other laboratory activities would not introduce additional, unmitigated ES&H risks. In addition, the IHRG Chair is tasked with determining if a more rigorous analysis such as probabilistic risk analysis or failure modes analysis is needed, in which case such additional analysis is conducted. While this process appears to be working adequately, consideration should be given to strengthening this review process by including a safety analyst as a regular part of the IHRG process. Once satisfied with the adequacy of the hazard evaluation and the controls to be in place, the IHRG recommends approval of the activity to the IRC facility manager. Once satisfied with the safety of the activity, the IRC facility manager and the laboratory manager approve the activity. The use of these mechanisms ensure direction and approval from line management and integration of ES&H requirements.

Procedures that identify and implement appropriate controls for hazards mitigation within the facility or activity are developed and utilized by workers and approved by line management. Roles and responsibilities for those involved in evaluating and authorizing research activities are described in PDD-1015 and MCP-3571, and other supporting company and facility documentation. Recommendations from the IHRG process for hazards mitigation actions, in addition to those proposed by the research activity, are required to be implemented by the researcher prior to commencement of

research activities. These actions are not required to be verified as complete by the IHRG, but is left up to the researcher to complete. As part of a self-assessment program, however, spot checks by facility management are conducted periodically to ensure all hazard mitigation features are in place as required by the IHRG review. Interviews with laboratory personnel showed that personnel assigned to accomplish hazard identification and mitigation roles are competent to execute their responsibilities. In addition, standards and requirements for accomplishing research activities are appropriately tailored to the hazards.

An Authorization Agreement is not required and as such does not exist for the IRC laboratory facilities. MCP-3567 requires such Agreements only for Category 1 and 2 nuclear facilities, and the IRC is classified as a Routinely Accepted by the Public Facility (management procedures issued since the facility classification was completed would likely place the facility as an Other Industrial Facility or a facility Not Requiring Further Safety Analysis). MCP-2451, Safety Analyses for Other Than Nuclear Facilities, is in place to set requirements for the development and maintenance of authorization basis documentation for non-nuclear facilities. An update to the IRC Hazard Classification is planned for Fiscal Year 2000.

Procedures are in place to implement the Authorization Basis. PDD-1015 requires that, prior to commencement of the activity, the Facility Manager determine whether research activities are within the bounds of facility hazard basis documents and existing environmental documentation. In addition, the IHRG is also chartered by PDD-1015 to provide such a determination of all proposed research activities. Interviews revealed that facility management considers the authorization basis documents for the IRC to be comprised of the IRC Laboratories Hazard Classification, dated September 1995, and the Environmental Assessment of the IRC. However, interviews of various other laboratory management and staff personnel did not reveal a uniform understanding of what constitutes the IRC authorization basis documentation. In addition, PDD-1015 does not formally define what constitutes the facility hazard basis documents. As such, a need exists to formally provide a formal definition for facility management and the IHRG to compare against during the approval process. (IHAZ1-1)

In addition, although the IRC is not required to have an Authorization Agreement, MCP-3567 allows other than nuclear facilities to have Authorization Agreements if determined appropriate by DOE or the contractor. Due to the variety and complexity of laboratory operations, the inherent risks involved in research activities, and the location within the city limits of Idaho Falls, consideration should be given to completing and maintaining an Authorization Agreement for the IRC laboratories to strengthen the use and maintenance of the IRC Authorization Basis.

An important element for the IRC to ensure that operations of the facility stay within the authorization basis is maintenance of the facility's chemical inventory and the storage of chemicals not in use within the centralized Chemical Storage Facility, IF-655. Each chemical entering the laboratory is bar coded and inventoried as part of the

INEEL Chemical Management System. Routine reports are generated for review by IRC management which compare facility inventory with authorization basis limits. In addition, the use of the centralized chemical storage prevents unneeded buildup of unused chemicals in the various individual laboratories. (IHAZ1-2)

At the Big Shop, this review found that mechanisms are in place and utilized by personnel to ensure hazards associated with the work throughout the facility have been identified and analyzed. Waste streams from the Big Shop have been identified, characterized, and catalogued. Exposure assessments of the various shop activities have been completed and are being maintained current. An updated Fire Hazards Analysis was recently completed for the Big Shop, and is undergoing internal review. The facility is supported by full time industrial hygiene and safety professionals, and is supported by fire protection engineering and environmental engineering personnel as needed. These professionals, along with facility management, provide on-going oversight of activities in the Big Shop to ensure industry and company requirements relating to ES&H are met. Adding to the assurance of Big Shop safety is the mind-set of the Big Shop staff, which appears to be continually looking to improve safety conditions around the area. As an example, Big Shop staff and management have exceeded requirements to eliminate the majority of hazardous waste streams at the facility by looking for and implementing ways to substitute less hazardous materials in their operations. (IHAZ1-3) The execution of existing procedures ensure personnel responsible for the analysis of environmental, health and safety concerns are integrated with those assigned to analyze the hazards for the facility or activity. In addition, the use of these mechanisms ensure direction and approval from line management for Big Shop activities and integration of the requirements.

Mechanisms are in place and utilized by personnel that describe the interfaces, roles and responsibilities of those personnel who identify and analyze the hazards of the scope of work. A close relationship exists between facility management, staff, and ES&H professionals to ensure responsibilities are understood and job functions are carried out. Interviews with Big Shop management and staff showed that personnel assigned to accomplish ES&H roles are competent to execute their responsibilities.

MCP-2451 is in place to develop, review, approve and maintain current elements of the facility Authorization Basis Documentation. The Authorization Basis for the Big Shop has been detailed in a recently issued Central Facilities Area Hazards Assessment Document for the Transportation Complex, which has been approved the DOE-ID Facility Director. This document concludes that the Big Shop is a facility Not Requiring Further Safety Analysis, and that activities are conducted in accordance with industry standards. The Job Safety Analyses and Fleet Operations procedures identify and implement appropriate controls for hazards mitigation within the facility. These documents are developed and utilized by workers and approved by line management.

An Authorization Agreement is not required and as such does not exist for the Big Shop. MCP-3567 requires such Agreements only for Category 1 and 2 nuclear

facilities, and the Big Shop is classified as a facility Not Requiring Further Safety Analysis. MCP-2451, Safety Analyses for Other Than Nuclear Facilities, is in place to set requirements for the development and maintenance of authorization basis documentation for non-nuclear facilities. Fleet Operations procedures and Job Safety Analyses require activities to be in accordance with industry codes and standards, which implements the assumptions in the Authorization Basis.

Conclusion: The objective has been met. Mechanisms are in place and being used to adequately analyze hazards associated with facility activities, incorporate necessary controls, and operate within approved authorization basis documentation. Opportunities do exist to strengthen the hazards review and mitigation process at IRC by more formally documenting the facility authorization basis and strengthening the independent hazards review process.

Issue(s)

- A formal definition of what constitutes the IRC Facility Authorization Basis is lacking. (IHAZ1-1)

Strength(s)

- The use of the centralized Chemical Storage Facility, along with the INEEL Chemical Management System, at the IRC prevents unneeded buildup of unused chemicals in the various individual laboratories and provides an effective mechanism to ensure the laboratory chemical inventory stays within that assumed in the authorization basis. (IHAZ1-2)

- Big Shop staff and management have exceeded requirements to eliminate the majority of hazardous waste streams at the facility by looking for and implementing ways to substitute less hazardous materials in their operations. (IHAZ1-3)

Inspector_____ Keith A. Lockie	**Team Leader**_____ Joseph Arango

Sub-Team: IRC/Big Shop	**FUNCTIONAL AREA: MG.1** **DATE**: September 22, 1999

OBJECTIVE: MG.1 An integrated process has been established and is utilized to identify and prioritize specific mission discrete tasks, mission process operations, modifications and work items. An integrated process has been established that ensures that mechanisms are in place to ensure continuous improvements are implemented through an assessment and feedback process, which functions at each level of work and at every stage in the work process. (CE II-1, CE II-5)

Criteria

8. Procedures and/or mechanisms that require line management to identify and prioritize mission-related tasks and processes, modifications, and work items are in place and utilized by personnel.

9. Procedures and/or mechanisms are in place and utilized by personnel to ensure identified work (i.e., mission-related tasks and process, processes or facility modification, maintenance work, etc.) can be accomplished within the standards and requirements identified for the facility.

10. Procedures and/or mechanisms are in place and utilized by personnel to collect feedback information such as self-assessment, monitoring against performance objectives, occurrence reporting, and routine observation. Personnel assigned these roles are competent to execute these responsibilities.

11. Procedures are in place that develop feedback and improvement information opportunities at the site and facility levels as well as the individual maintenance or activity level. The information that is developed at the individual maintenance or activity level is utilized to provide feedback and improvement during future similar or related activities.

12. Procedures and/or mechanisms are in place and utilized by managers to identify improvement opportunities. Evaluation and analysis mechanisms should include processes for translating operational information into improvement processes and appropriate lessons learned.

13. Procedures and/or mechanisms are in place and utilized by managers to consider and resolve recommendations for improvement, including worker suggestions.

14. Procedures and/or mechanisms are in place, which include a process for oversight that ensures that regulatory compliance is maintained.

Approach

Record Review: Review the facility or activity long-range planning documentation. This should include such items as: summary schedules, plan of the week schedules, long-range maintenance schedules, modification schedules, etc.

Review the procedures and mechanisms that line managers utilize to identify and prioritize mission-related tasks and processes, modifications, and work items. All direct funded work is controlled by procedures found in MCP-14, "Graded Approach to Defining Project Controls." Three key facility and activity level procedures mentioned in MCP-14 that are used to specify the detailed requirements of this graded approach are MCP-23, "Planning and Managing Projects with Grade I Cost and Schedule Controls," MCP-3543, "Planning and Managing Projects with Grade II Cost and Schedule Controls" and MCP-3544, "Planning and Managing Projects with Grade III Cost and Schedule Controls." Appendix B of MCP-14 defines Grade I, II and III projects. Indirect funded work is controlled by the process described in MCP-2668, "Financial Planning, Administration and Control of Indirect Activities/Work." Project Management for construction work also follows guidelines provided in GDE-51, "INEEL Guide for Project Management." Projects funded by the EM Program must meet additional but integrated project development and management requirements described in MCP-3416, "Environmental Management Program Baseline Development, Management and Reporting."

Review the procedures and/or mechanisms that are utilized by the facility or activity to ensure that identified work is accomplished in accordance with established standards and requirements. Standards and requirements are rolled down to the facility level for implementation utilizing the process described in MCP-2447, "Requirements Management." Review facility processes for ensuring standards and requirements promulgated by the MCP-2447 process are reflected in activities at the facility.

Review the performance monitoring documentation for the feedback and continuous improvement process. This should include such documents as occurrence reports, deficiency reports, results of post-job reviews, safety observer reports, Issue Communication and Resolution Environment (ICARE) reports and reports of self-assessments and independent assessments. Ensure occurrence reports and ICARE entries are being completed in accordance with the requirements specified in MCP-190, "Event Investigation and Occurrence Reporting" and MCP-2723, "Reporting and Resolving Employee Safety Concerns & Suggestions," respectively. Process deficiencies should be addressed by following the process described in MCP-598, "Process Deficiency Resolution." Lessons learned are managed and processed in accordance with the requirements described in MCP-192, "Lessons Learned Program." Management self-assessments are conducted in accordance with MCP-8, "LMITCO Self-Assessment Process for Continuous Improvement." The process of independent assessment of facilities and activities is described in MCP-552, "Conduct of Independent Oversight Assessments." The FY-99 schedule of independent oversight assessment activities can be found on the QA and Conduct of Operations internal homepage at URL:

http://home.inel.gov/qa&coo/ipa.html. The Facility Excellence Program, described in PDD-1011, is a structured means of regularly assessing facilities for compliance in any of these areas.

Review procedures for work control to determine that adequate feedback and improvement mechanisms are in place at the individual maintenance or activity level. MCP-3003, "Performing Pre-Job Briefings and Post-Job Reviews," is the activity-level requirements document for this process.

Review actual data from these processes to evaluate the effectiveness of the implementation of these mechanisms.

Interviews: Interview management personnel responsible for the identification and prioritization of work. This should include personnel such as those responsible for long-range planning documentation, schedule preparation, etc. Interview personnel responsible for administering the feedback and continuous improvement process. This should include personnel such as those responsible for occurrence reporting, lessons learned preparation, preparation, ICARE entries, self-assessment, and oversight. Interview personnel responsible for capturing and utilizing feedback and improvement information during individual maintenance or other work activities. Interview the facility ICARE representative. Interview line management to determine level of knowledge and involvement in the ICARE process.

Observations: Observe work definition and planning activities to ensure that requirements specified by the Requirements Management process (MCP-2447) are considered and implemented at the activity level. If possible, observe an Operational Safety Board (OSB) meeting and a Facility Operation Review and Implementation Board (FORIB) meeting. If possible, observe a program or project Change Control Board meeting. Observe a Post-Job Review. Observe any critiques which may arise throughout the course of the observation process.

<u>Record Review</u>

- PDD-1004, INEEL ISM Program Description Document, Rev. 3, 5/11/99
- PDD-1005, Site Operations, Rev. 0, 8/26/99
- STD-101, Integrated Work Control Process, Rev. 1
- MCP-14, Graded Approach to Defining Project Controls, Rev. 5, 3/15/99
- MCP-8, LMITCO Self-Assessment Process for Continuous Improvement, Rev.1, 8/31/99
- MCP-3543, Planning and Managing Projects with Grade II Cost and Schedule Controls, Rev. 1, 7/30/99
- MCP-2668, Financial Planning, Administration and Control of Indirect Activities/Work, Rev. 1, 8/16/99
- GDE-51, INEEL Guide for Project Management, Rev. 1, 7/15/99
- MCP-2447, Requirements Management, Rev.1, 4/30/99
- MCP-190, Event Investigation and Occurrence Reporting, Rev. 1, 8/24/99

- MCP-192, Lessons Learned Program, Rev. 1, 6/10/99
- MCP-2723, Reporting and Resolving Employee Safety Concerns and Suggestions
- MCP-598, Process Deficiency Resolution
- MCP-552, Conduct of Independent Oversight Assessment
- PDD-1011, Excellence Program, Rev. 1, 3/15/99
- MCP-3003, Performing Pre-Job and Post-Job Briefings
- MCP-3562, Hazard Identification, Analysis & Control of Operational Activities
- MCP-35, Training Needs Analysis, Rev. 0, 8/25/97
- MCP-36, Job Analysis, Rev. 0, 8/25/97
- MCP-3735, Fleet Operations Roles and Responsibilities, Rev. 0, 3/17/99
- STD-1094, Mobile Fleet Maintenance, Rev. 0, TBD
- STD-1095, Bus Operations, Rev. 0, TBD
- Functional Task Matrix
- Position Descriptions (PDs) for:
  Environmental Compliance personnel
  Bus/Heavy Equipment Foreman
  Fleet Maintenance Supervisor
- Individual training plans (ITPs) and training records for:
  Bus/Heavy Equipment Foreman
  Fleet Maintenance Supervisor
  Painter and Body work craftsman
- MCP-3571, Independent Hazard Review, Rev. 0, 3/1/99
- PDD-1015, AEDL Research Laboratory Operations, Rev. 0, 5/1/99
- Position Descriptions (PDs) for:
  IRC SAD
  IRC Facility Manager
  AEDL Lab Manager
  Laboratory Custodian
  Laboratory Operations ES&H Manager
  2 Principal Investigators
- Individual training plans (ITPs) and training records for:
  2 AEDL Lab Manager
  2 Principal Investigators
  2 Lab Custodians
- Meeting Minutes IRC/LL Tracking and Trending Subcommittee, March 4, 1999
- Voluntary Protection Program (VPP) Employee Safety Team (EST) For IRC/Leased Labs Highlights and Meeting Minutes, August 19, 1999
- Employee Guide to Matrix Management for the Applied Engineering Development Laboratory (AEDL), November 1995
- AEDL Facility Excellence Program

<u>Interviews Conducted</u>

- Heavy Equipment Mechanic (Union rep)
- Compliance Coordinator

- Fleet Maintenance Supervisor
- Heavy Equipment and Bus Maintenance Foreman
- Foreman Bus Ops
- Bus Ops Supervisor
- Deputy CFA SAD
- Fleet Ops Manager
- Safety Engineer
- Industrial Hygienist
- Vehicle Repair Specialist
- IRC SAD
- Lab Operations ESH&Q Manager
- IFF SAD
- IRC Facility Manager
- Issue Management Department Manager
- Industrial Hygienist
- Environmental Compliance Personnel
- Rad Tech
- Fire Protection Specialist
- Lab Custodian, Materials and Processes
- Department Manager, Materials and Processes
- Principal Investigator/Lab Custodian, Chemical and Biological Sciences
- Department Manager, Conduct of Engineering
- AEDL, Acting Vice President and General Manager
- AEDL, Acting Chief Engineer
- Director, Environmental and Life Sciences Products
- Director, Alternate Energy and Natural Resource Products
- Program Manager, National Security Programs
- Lab Tech/Lab Custodian, Materials and Processes
- Lab Custodian, Nuclear Engineering
- Principal Investigator/Lab Custodian, Software and Electronics
- Director, End Use Energy Efficiency Products
- IRC Self-Assessment Coordinator
- IRC Planner
- IRC Safety Engineer

Observations

- IRC POD

Discussion of Results

Big Shop Fleet Operations work task priorities for maintenance are assigned first to emergency and safety related vehicles, bus operations, and then Program needs. The Big

Shop budget is based on indirect funding and is controlled by MCP-2668, Financial Planning, Administration and Control of Indirect Activities/Work.

With the exception of documentation of quick fixes, the self-assessment process at the Big Shop and IRC complies with the requirements of MCP-8 and MCP-3449. During assessments, deficiencies are consistently not being documented if they can be resolved simply and quickly without the need of a corrective action plan (i.e., working outside a fume hood, not wearing safety glasses, improper use of extension cords). Some SMEs at the IRC might document these types of quick fix conditions in a log book but even then, unless a cluster of the same type of deficiencies are observed in a walkthrough, they typically do not get documented and reported. (IMG1-1) This also has the unanticipated impact of weakening the reliability of performance trending. For both Big Shop and IRC, the entering of process deficiencies into ICARE complies with MCP-598, Deficiency Screening and Resolution, and no compliance issues were observed or discovered with respect to MCP-190, ORPS, MCP-2723, Reporting and Resolving Employee Safety Concerns, and MCP 192, Lessons Learned Program.

In implementing self-assessment activities at the Big Shop and IRC to comply with MCP-8 and MCP-3449, the role of the facility ES&H functional SMEs was reviewed especially as their activities relate to ensuring regulatory compliance. The Big Shop ES&H SMEs provide input to schedule, priorities and functional areas evaluated during their self-assessment. The Big Shop Self-Assessment Coordinator monitors the execution of ES&H inspections. This level of direct involvement by the SME assures compliance with requirements flowdown processes well as assures compliance with company level safety and health manual. The IRC has decided to use the Facility Excellence Walkthroughs and line self-assessments to comply with MCP-3449. To this end they have developed an internal Facility Excellence Walkthrough Program description document. This document is not a controlled document and the program effectiveness has not been demonstrated.

The roles and responsibilities of the Big Shop SMEs are documented in MCP-3735. However, they do not address the roles and responsibilities for self-assessment activities at the Big Shop. A recommendation is to add the roles and responsibilities of SMEs for self-assessment activities to the appropriate section in MCP-3735. (IMG1-2)

Interviews with the SMEs at the IRC indicated that they believe their responsibilities are in assuring day to day operational compliance with the applicable ES&H functional area requirements and their participation in the Independent Hazard Review (IHR) process. Although not procedurally driven, day to day operational surveillance by the ES&H SMEs was noted by lab managers, lab custodians, and principle investigators as being effective at providing feedback to them for conducting research safely and within controls. Another critical function of the IRC SME is to provide expertise and feedback on the experimental design and authorization of all research at the IRC. It is through the IRC, that the SME works to ensure ES&H requirements and controls are identified and improvements to experimental design are made.

However, in discussions with managers and lab custodians at the IRC, it was learned that SMEs are not routinely consulted or used during line self-assessment. Information from lab management and lab custodian self-assessments is not routinely reviewed or shared with SMEs. The SMEs interviewed have never participated with lab manager and lab custodians in their line self-assessments. This is in contrast to the Big Shop where SMEs routinely participate in line management self-assessments. At the IRC, with the exception of the Chemical Hygiene Officer, no formal documentation exists outside of their position description for their roles and responsibilities. (IMG1-3)
Another concern at the IRC is that SMEs are not routinely made aware of information and analysis being generated by management on the results of the self-assessment process. What lessens the severity of this concern is the high level of communication of observations between the SMEs and the Facility Manager, the Facility Excellence Walkthroughs, and the overall level of assessment activity that occurs in the IRC. The Facility Manager has been effective in responding to concerns elevated by the SMEs. Actions taken have ranged from the dissemination of lessons learned to targeting management self-assessments.

At Big Shop and IRC, a sample of management, worker, and ES&H SME position descriptions and training records were reviewed to aid in determining if responsibilities have been delegated to individuals with competence commensurate to those responsibilities. At both Big Shop and IRC, individuals are being assigned responsibilities that are commensurate with their competence. The review also indicated that as individuals are assigned additional responsibilities, they are provided training adequate for those additional responsibilities. The level of assessment at both facilities, and the feedback given to individuals from various assessment activities as well as the annual performance evaluation is another mechanism used to ensure individuals remain competent in meeting their responsibilities.

The LMITCO employee performance appraisal form and the Safety and Health Personal Goals and Action Plan have documented performance attributes and measures that flow down from institutional ES&H measures as well as specific ES&H measures tailored to the type of work the individual is responsible for performing. The Big Shop Safety and Health Personal Goals and Action were very specific and detailed at all levels. All personnel evaluation expectations provided objective measurable performance goals. The Safety and Health Personal Goals and Action Plans differs significantly in detail for managers and scientific staff and support personnel at IRC. IFF maintenance Safety and Health Personal Goals and Action Plans were much more specific and detailed than the rest of those reviewed in the IRC. While consistent in the attributes used and the detail of the management level Safety and Health Personal Goals and Action Plans are adequate, they are largely general and prone to a level of subjective interpretation.

At the Big Shop, a preliminary effort at reviewing and trending the results of self-assessment deficiencies into ICARE has been undertaken. It is a credit to the Big Shop management and staff team that this initial trending and analysis effort was completed in less than 24 hours after discussions were held on this concern with the ISM Verification Team. The cohesiveness and responsiveness of the Big Shop exemplifies the type of

worker involvement and team work important in implementing and maintaining effective ISM. (IMG1-5) The report provided good initial feedback to management on where to target additional assessment efforts. However, this effort suffers from the under reporting of deficiencies in the line self-assessment process previously discussed. Trending of all self-assessment, to include, line management assessments (as long as the information is collected and documented consistently) results can be a good indicator of line ES&H performance. It provides feedback on the performance of operations and maintenance activities and therefore provides more specific feedback in the employees' annual performance evaluation. Over time trending should lead to better performance measures and more efficient targeting of self-assessment activities.

Trending on injury/illness statistics is performed by the Tracking and Trending Subcommittee of the IRC Employee Safety Team (EST). This team would benefit from the involvement of the SMEs in identifying in a systematic fashion the way information is documented and reported (ES&H categories or topical areas, and other information) to support better data collection and analysis. Some preliminary effort at reviewing and trending the implementation and effectiveness of the IRC self-assessment program has been undertaken. This effort could become more effective by completely reporting deficiencies, establishing the goals and functions of a facility trending program, and entering the information into a database.

For both Big Shop and IRC, the trending process could be improved through an integrated and structured approach for capturing and categorizing information from assessments on the performance of assessment activities, work groups and managers. (IMG1-4)

Priorities for pursuing and funding research proposal and activities are based on meeting the goals of the LMITCO's Long Range Plan and the AEDL Long Range Priority Initiatives. Final funding priorities for the various DOE research programs at the IRC are ultimately established by the DOE program funding the research. Internal priorities for pursuing LDRD research is also evaluated on the potential short and long term merit the research will have in meeting the AEDL Long Range Plan Initiatives and potential future benefit to DOE or other customer. A Long Range Plan Initiative Summary is filled out for all research proposals. It documents the financial benefits as well as non-financial benefits to INEEL, planned accomplishments, long term growth potential, political factor, barriers to success and plans for overcoming barriers.

Facility maintenance related tasks are prioritized in descending order based on safety impacts, equipment, facility, utility reliability impacts, and quality of life. The Core ES&H Infrastructure Process within lab operations is another prioritization process being implemented. This process quantifies and ranks core ES&H activities by the level of risk reduction that it provides the facility. This allows management, and especially the SAD, the ability to reallocate resources from areas of less risk reduction value to areas of greater risk reduction value. It also maintains the visibility of activities that have had the scope reduced or are not being performed and allows the SAD to see across all funding sources regardless of type of funding. It is also useful in defending budgets especially the

use of indirect funds. When resources are cut or threatened, the process makes visible the activities that will not be performed or reduced in scope as well as the level of risk that the facility, the contractor, and DOE will assume without the funding. (See IDOE1-4)

Regardless of funding source or program all direct funded research projects and proposals for the IRC are budgeted and controlled by MCP-3543, Planning and Managing Projects with Grade II Cost and Schedule Controls.

Planning at the Big Shop and IRC was examined to ensure information from lessons learned is used in planning work. The design of the Lessons Learned database allows for quick and easy access and screening of relevant information for planners. Because of its design and ease of use, it is very effective and the planners interviewed like accessing the database. Information from the Lessons Learned database is routinely used in planning work, plan of the day meetings, pre-job briefings, and walk downs.

Conclusion:

The objective has been met. Procedures and mechanisms for feedback and improvement are in place. However, they can be made more effective.

Issue(s)

- Documenting and reporting of all observed deficiencies at Big Shop and IRC does not occur. During assessments and walkthroughs, deficiencies that can be fixed quickly are not documented and reported in compliance with MCP-8. (IMG1-1)

- MCP-3735 does not address the roles and responsibilities of SMEs for self-assessment activities at the Big Shop. (IMG1-2)

- The roles and responsibilities of the IRC ES&H SMEs need to be documented. (IMG1-3)

- The Big Shop and IRC need to improve the trending program for facility level self-assessment. (IMG1-4)

Strength(s)

- The cohesiveness and responsiveness of the Big Shop exemplifies the type of worker involvement and team work important in implementing and maintaining effective ISM. (IMG1-5)

Inspector_____ Thomas M. McDermott	**Team Leader**_____ Joseph Arango

Sub-Team: IRC/Big Shop	**FUNCTIONAL AREA: MG.2** **DATE**: September 21, 1999

OBJECTIVE: MG.2 Clear and unambiguous roles and responsibilities are defined and maintained at all levels within the facility or activity. Managers at all levels demonstrate a commitment to ISMS through policies, procedures, and their participation in the process. Facility or activity line managers are responsible and accountable for safety. Facility or activity personnel are competent commensurate with their responsibility for safety. (CE II-6)

Criteria

1. Procedures and/or mechanisms are in place and utilized by personnel that define the roles and responsibilities for the identification and prioritization of mission-related tasks and processes, facility or process modification, and other related work items.

2. Procedures and/or mechanisms are in place that define clear roles and responsibilities within the facility or activity to ensure that safety is maintained at all levels.

3. Facility or activity procedures specify that line management is responsible for safety.

4. Procedures and/or mechanisms are in place and utilized to ensure that personnel who supervise work have competence commensurate with their responsibilities.

5. Procedures and/or mechanisms are in place and utilized to ensure that personnel performing work are competent to safely perform their work assignments.

Approach

Record Review: Review organizational documentation such as MCP-1752 "RWMC Facilities Responsibilities," PDD-1015 "AEDL Research Laboratory Operations," "Idaho Falls Facilities Tenants' Manual," MCP-3640 "Central Facilities Area Operations Information Roles And Responsibilities" and other similar documents for TRA and WERF to determine the personnel positions with responsibility associated with this objective. Ensure roles and responsibilities for personnel responsible for safety are clearly defined and understood and properly executed. Review should include position descriptions, Form-325.01 "Employee Position Description" and other applicable MCPs that describe roles and responsibilities related to ensuring safety are maintained. The review should consider personnel in line management and staff positions and should evaluate whether line managers are responsible for safety.

Review the procedures established such as PDD-13 “Training and Qualification Program,” MCP-27 “Preparation and Administration of Individual Training Plans,” and MCP-33 “Training Qualification and Certification” to ensure that managers and workers are competent to safely perform work. Review the personnel records which should include the “Training and Implementation Matrix” (TIM), “Individual Training Plans” and “Employee Training History,” to identify the individual qualifications that meet the elements of the position descriptions. Review the applicable records of qualification and certification. Review any training or qualification material, including training and qualification manuals such as Manual 12 and the associated “yellow sheets” that support gaining or verifying competence to fill the positions.

Interviews: Interview selected personnel at all levels of facility or activity management who are identified by the record review above. Verify their understanding and commitment to ensuring that safety is maintained for all work at the facility or activity. Interview a selected number of supervisors and workers to determine their understanding of competency requirements and their commitment to performing work safely.

Observations: Observe training being delivered for key program such as hazards identification and analysis. Observe scheduled activities that demonstrate that clear roles and responsibilities are established and understood, that line managers are actively involved with decisions affecting safety, and that managers and workers are competent to perform their duties. Activities such as weekly planning meetings, plans of the day, event critiques, safety training, OSB meetings, Pre-job briefs, Site Operations Council (SOC) meetings, Corrective Action Review Boards (CARBS) and safety meetings are typical events that may provide good examples of the safety training and decision making process. Activities such as facility/process operations, testing, and maintenance will provide opportunities to observe personnel in the execution of roles and responsibilities, their understanding of procedures, awareness of hazards and management commitment to safety.

Record Review:

- PDD-1015, Applied Engineering and Development Laboratory (AEDL) Research Laboratory Operations, Rev. 0, 5/1/99
- MCP-3652, Roles and Responsibilities of Idaho Falls Facilities Tenants. Appendix B, Roles and Responsibilities for AEDL Laboratory Tenants, Rev. 0, 9/9/99
- MCP-3640, Central Facilities Area (CFA) Operations Information Roles and Responsibilities, Rev. 0, 8/26/99
- PDD-13, Training and qualification Program, Rev. 1, 3/17/99
- MCP-27, Preparation and administration of Individual Training Plans (ITP), Rev. 1, 10/22/97
- MCP-33, Personnel Qualifications and Certification, Rev. 3, 3/17/99
- PDD-1025, Fleet Operations Training, Rev. 0, 8/23/99

- MCP-39, INEEL Fleet Operations, Rev. 0, 1/26/98
- MCP-3735, Fleet Operations Roles and Responsibilities, Rev.0, 9/13/99
- PDD-1004, INEEL Integrated Safety Management System, Rev. 3, 5/11/99
- MCP-3571, Independent Hazard Review, Rev. 0, 3/1/99
- IHRG Package for IRC-99-766 and IRC-99-767
- PRD-115,Configuration Management, Rev. 2 (Pending), 8/27/99
- AEDL Facility Excellence Program Walkdown inspection Guide
- Employee Guide to Matrix Management for the AEDL, 11/95
- Form 325.01, Employee Position Description (EPD) all levels (senior managers, supervisors, PIs, Operators, Mechanics)
- Form 340.02, Employee Job Function Evaluation all levels (senior managers, supervisors, PIs, Operators, Mechanics)
- Employee Individual Training Plan (Total) all levels (senior managers, supervisors, PIs, Operators, Mechanics)
- INEEL Employee Training History all levels (senior managers, supervisors, PIs, Operators, Mechanics)
- Legacy Database Historical Data Report all levels (senior managers, supervisors, PIs, Operators, Mechanics)
- INEEL Employee Qualifications all levels (senior managers, supervisors, PIs, Operators, Mechanics)
- Lab Custodian Book

Interviews Conducted

- Fleet Management Supervisor
- Big Shop Facility Manager
- Big Shop Maintenance Supervisor
- Bus Operations Supervisor
- Light Vehicles Mechanics (2)
- Heavy Equipment Mechanics (2)
- Light Vehicles Foreman
- Big Shop Training Coordinator
- IRC Principle Investigators (7)
- IRC Lab Custodian (4)
- IRC Fire Loop Upgrade Construction Project Manager
- IRC ORPS Coordinator
- IRC Facility Manager
- CARB and Self Assessment Coordinator
- Laboratory Operations Director
- Laboratory Operations ES&H Director

Observations

- Big Shop Plan of the Day

- CFA Plan of the Day
- Independent Hazard Review Group Meeting
- IRC Employee Safety Team Meeting

Discussion of Results

The Big Shop defines the roles and responsibilities for key personnel who can impact or affect safety within Fleet Operations in MCP-3735, Fleet Operations Roles and Responsibilities. This procedure addresses the roles and responsibilities of the identified Fleet Operations positions and is applicable to the individuals assigned to those positions within Fleet Operations. It does not address positions such as Fire Protection Engineer, Building Engineer, and various crafts as these functions are provided by external organizations such as Central Facilities (the landlord) as defined in MCP-3640, Central Facilities Area Operations Information Roles and Responsibilities. These procedures (MCP-3735 and MCP-3640) clearly define and assign to line management the responsibility for safety at all levels ensuring all activities are conducted in a manner that implements the Integrated Safety Management System (ISMS), the Voluntary Protection Program (VPP) and applicable environmental, safety, and health requirements. Document reviews, observations, and interviews indicate that roles and responsibilities for personnel responsible for safety are clearly defined, understood, and properly executed.

The INEEL Research Center (IRC) defines the roles and responsibilities for key personnel who impact or affect safety within the laboratories in PDD-1015, Applied Engineering and Development Laboratory (AEDL) Research Laboratory Operations and in MCP-3652, Roles and Responsibilities of Idaho Falls Tenants. PDD-1015 describes the AEDL processes that implement DOE Integrated Safety Management requirements for the conduct of research. Roles and responsibilities for personnel working at the AEDL such as Laboratory Manager, Work Organization Manager, Laboratory Custodian, Principal Investigator, Involved Project Personnel, Site Area Director, IRC Facility Manager, IRC ESH&Q Manager, ESH&Q Personnel, and the Independent Hazard Review Group (IHRG) are described in details in this document. Also, MCP-3652 assigns roles and responsibilities concerning Conduct of Operations, Event Investigation and Occurrence Reporting, Lockout/Tagout and Outages, Safety Review, Audits/Self-assessments, and other functional areas. Document reviews, observations, and interviews indicate that roles and responsibilities for personnel responsible for safety are clearly defined, understood, and properly executed.

Employee Positions Descriptions (EPD), Individual Training Plans (ITPs), and Employee Training Histories for several managers, supervisors, crafts, mechanics, principal investigators, and laboratory custodians were reviewed. The EPD requires that all employees “must be familiar with, and comply with, all relevant health and safety requirements” and in addition require managers and supervisors to “use established Integrated Safety Management System principles to insure work is conducted safely”. ITPs included training on Stop Work Authority, training on methods for reporting/resolving unsafe work practice or conditions and 1999 ESH &

QA awareness training. Commitment and ownership of safety in all operations from both management and workers were evident from interviews and observations. The workers expressed strong commitment and responsibility to perform work safely due to their early input and involvement in the ISMS implementation at their facilities. Both management and workers understood their roles and responsibilities to ensure safety is maintained for all work and activities and believe they are getting the necessary training needed to perform their jobs and tasks safely. Based on this review, it was determined that the individuals have competence commensurate with their responsibilities.

Both the Big Shop and IRC use PDD-13, Training and Qualifications, and MCP-27, Preparation and Administration of Individual Training Plan. PDD-13 emphasizes line management direct responsibility for the health, safety, and productivity of assigned personnel and ultimate responsibility and accountability for the training of personnel in their organization. Specifically, line management is responsible for identifying employee training needs, developing, updating, and approving ITPs, and budgeting and ensuring that employees complete required training. MCP-27 provides a process for the preparation, maintenance, and administration of ITPs. Line management is required to develop a training plan that provides the necessary training and qualifications to their employees and to ensure they are capable of performing assigned work. Employees training is tracked in the Training Records and Information Network (TRAIN) and a reminder of required training is sent to the employee, supervisor, and training coordinator 90, 60, and 30 days prior to the expiration of the employee specific training. Although the TRAIN system is capable of tracking all training requirements and courses completed by employees, it is not utilized fully to ensure that completed training requirements and training history for individuals are on that system. The review indicated that the training program at both the Big Shop and the IRC is implemented according to PDD-13 and MCP-27 and that individuals are provided training adequate for their responsibilities.

The Big Shop requires that vendors provide training to their staff on new heavy equipment. Operators are also invited to attend these training session to get a better understanding of the heavy equipment capabilities and its maintenance requirements while becoming familiar with its safe operation. This process provides the mechanic and the operator the information needed for the safe operation of this equipment and improve the feed back of issues concerning the equipment operation and maintenance.

The IRC Independent Hazard Review process identifies the specific training required for each research activity. Both IRC and Big Shop utilize the Training Evaluations and Comment Forms and the Training Improvement Proposal System (TIPS) to provide feedback and suggestions for improvement.

Subcontractors operating at the IRC facilities were required to either follow the INEEL Integrated Safety Management System or develop and submit their own plan to the Idaho Falls Facilities Site Area Director (SAD) for approval prior on any work

initiated at the IRC. This plan provided the roles and responsibilities of the subcontractor personnel and the training required prior to the start of the project. This review indicated that the subcontractor understands his roles and responsibilities and project personnel have adequate training for their responsibilities.

Conclusion: The objective has been met. Clear roles and responsibilities are defined and maintained at all levels within the Big Shop and IRC. Commitment and ownership of safety in all operations from both management and workers were evident and personnel are competent commensurate with their responsibility for safety.

Issue(s)

- None

Strength(s)

- None

Inspector_____ Jihad Aljayouhsi	**Team Leader**_____ Joseph Arango

Sub-Team: IRC/Big Shop	**FUNCTIONAL AREA: OP** **DATE**: September 21, 1999

OBJECTIVE: OP.1 An integrated process has been established and is utilized to effectively plan, authorize and execute the identified work for the facility or activity. (CE II-4)

Criteria

6. Procedures and/or mechanisms are in place and utilized to ensure that work planning is integrated at the individual maintenance or activity level, and work planning fully analyzes hazards and develops appropriate controls.

7. Procedures and/or mechanisms are in place and utilized which ensure that there is a process used to confirm that the facility or activity and the operational work force are in an adequate state of readiness prior to authorizing the performance of the work.

8. Procedures and/or mechanisms are in place and utilized which ensure that there is a process used to gain authorization to conduct operations.

9. Procedures and/or mechanisms are in place and utilized which ensure that safety requirements are integrated into work performance.

10. Procedures and/or mechanisms are in place and utilized which ensure that adequate performance measures and indicators, including safety performance measures are established for the work.

6. Workers actively participate in the work planning process.

Approach

Record Review: Review documents and/or mechanisms that govern the work control process for planning, authorizing, and conducting work such as STD-101 "Integrated Work Control Process," MCP-3562 "Hazard Identification, Analysis and Control for Operational Activities," MCP-3571 "Independent Hazard Review," PRD-5043 "Operational Safety Boards" and MCP-3480 "Environmental Aspect Evaluation and Maintenance." Review should assess the adequacy of the documents to meet the requirements listed above and determine that the maintenance and work control process is effectively integrated into the facility/activity procedures. In particular, note the integration of hazard identification and controls, (i.e., chemical, electrical, radiological, waste streams, environmental) into the work planning process. Review the adequacy of the division of responsibilities as defined by the governing

procedure, worker involvement in all aspects of the activity, and work authorization process. Controls for individual work items or activities such as Job Hazards Analysis (JHA), Radiation Work Permits (RWP), Hazard Profile Screen Checklist (HPSC), Work Control Forms (WCF), Confined Space Entry Permit, and operating procedures should also be evaluated.

NOTE: Although the ALARA Committee process will be reviewed by the Radiological Controls SME, a review of work control documents should be made to ensure the basic concepts of ALARA as well as any ALARA Committee recommendations are incorporated into the work control documentation.

Review the integration of subcontractor work control into the facility work control process. Evaluate the review of subcontractor work control documentation, the approval of the documentation, the authorization to conduct work and the oversight of subcontractor work in the facility.

Review the performance measures and performance indicators using the "INEEL Performance Measures and Trending Report," MCP-3521 "Trending Center," self-assessments conducted in accordance with MCP-8 "LMITCO Self-Assessment Process for Continuous Improvement," or the Facility Excellence Program PDD-1011 "Facility Excellence Program." Determine if these tools provide information that is truly a direct indicator of how safely the work is being performed.

Review the process used to prepare Authorization Agreements, MCP-3567 "Authorization Agreements with Authorization Basis List" and TEM-2 "Template for Authorization Agreements with Authorization Basis List." Review the Authorization Agreements for the Advanced Test Reactor (ATR) and the Radioactive Waste Management Complex (RWMC) to determine if they are adequate, that they demonstrate effective integration, and that proper procedures were followed to prepare, review, and approve them.

Interviews: Interview personnel responsible for preparing, authorizing, performing, and measuring the performance of the work. This should include personnel such as those responsible for preparing and maintaining work control documents, hazard identification and control documents, the Plan of the Day (POD), equipment status files, pre-job briefings, and the conduct of facility or activity operations. Interview personnel responsible for individual activity procedures and controls (e.g., JHAs, RWPs, HPSCs, WCFs, etc.) Verify adequate worker involvement at each step of the process. Interview personnel responsible for the development and implementation of the self-assessment program including individuals who participate in self-assessments. Interview those individuals responsible for development, maintenance, and approval of the Authorization Agreement. Interview members of the management team charged with adherence to the requirements listed within the Authorization Agreement.

Observations: Observe the actual authorization and performance of work activities. Observe a plan of the day or plan-of-the-week meeting. Attend an Operational Safety Board (OSB) meeting or an Independent Hazard Review Group (IHRG) meeting with field verification that hazard controls specified by the hazards control documents are being implemented. Team members should observe the development of a maintenance work package as well as the field execution of a maintenance work package. Observation should include the pre-job brief, authorization by the managers to proceed, command and control of the work, review of safety requirements, etc. Observe work hazard identification activities (e.g., JHAs, RWPs) and the application of MCP-3562 during an operational procedure walkdown and review. Observe worker involvement in these processes.

Record Review

- STD-101, Integrated Work Control Process, Rev. 1, 8/26/99
- MCP-3562, Hazard Identification, Analysis and Control for Operational Activities, Rev. 0, 7/31/99
- MCP-3571, Independent Hazard Review, Rev. 0, 3/1/99
- INEEL Performance Measures and Trending Report,
- MCP-3521, Trending Center, Rev. 0, 3/1/99
- MCP-8 , LMITCO Self-Assessment Process for Continuous Improvement, Rev. 3, 8/31/99
- PDD-1015, AEDL Research Laboratory Operations, Rev. 0, 5/1/99
- MCP-135, Industrial Hygiene Exposure Assessment, Rev. 1, 10/1/98
- Independent Hazard Review Group Packages
- Job Safety Analysis
- Exposure Assessments
- Test Plans
- Performance Measures and Indicators
- Employee Position Descriptions
- Maintenance Work Order Packages
- MCP-3652, Roles and Responsibilities of Idaho Falls Facilities Tenants, Rev. 0, 9/13/99
- Laboratory Custodian Notebooks
- LO/TO Logbooks and Record Sheets
- Self Assessment Reports
- POD Schedules
- Facility Hazard List
- HAD-56, Central facilities Area Hazards Assessment Document Transportation Complex, Rev. 0, 9/13/99
- Fleet Maintenance Functional Task Matrix
- STD-1094, Mobile Fleet Maintenance, Rev. 0, 9/13/99
- Shop Repair Orders
- MCP-39, INEEL Fleet Operations, Rev. 0, 1/26/99
- MCP-3735, Fleet Operations Roles and Responsibilities, Rev. 0, 9/13/99

- STD-1095, Bus Operations, TBD
- MCP-3752, Fleet Supplemental to Chapter XVII – Operator Aids, Rev. 0, 9/13/99
- TPR-6336, Filling the Quick Response Fueling Station Tank, Rev. 0, 9/13/99
- PDD-1025, Fleet Operations Training, Rev. 0, 8/23/99

Interviews Conducted

- IFF Site Area Director
- IFF Operations Manager
- IFF Maintenance Manager
- IFF Facility Operator
- IFF Electrician
- IFF Mechanic
- IRC Site Area Director
- IRC Facility Manager
- IRC Laboratory Managers
- IRC Principle Investigators
- IRC Laboratory Custodians
- IRC Principle Engineering Technician
- Fleet Operations Manager
- Fleet Managment Services Supervisor
- Bus/Heavy Equipment Foreman
- Light Vehicle Foreman
- Bus Driver Foreman
- Bus Drivers
- Bus/Heavy Equipment Mechanics
- Light Vehicle Mechanic
- Fleet Operations Services Industrial Hygienist
- Fleet Operations Services Safety Engineer
- Fleet Operations Senior Supervisory Watch Personnel

Observations

- IFF POD Meeting
- IRC Laboratory Electrical Modification
- IRC Environmental Chamber Trouble Shoot and Repair
- IFF Work Order Package Preparation and Authorization
- IRC Thermite Laboratories Walk-Through
- IRC IHRG Meeting
- IRC Heavy Chemistry Laboratory Operations
- IRC Biological Technology Laboratory Operations
- Fleet Operations POD Meeting
- Fleet Operations OSB Meeting
- Bus Shop Repair Order Performance

- Heavy Vehicle Shop Repair Order Performance
- Light Vehicle Performance

Discussion of Results

Procedures and mechanisms that govern the work control process for planning, authorizing, and conducting work at the Big Shop and the INEEL Research Center (IRC) were reviewed against the above criteria.

The majority of work performed by Fleet Operations is shop work (vehicle repair) and is defined as maintenance related tasks (MRT) per STD-101. This work is performed in the Big Shop under the requirements of STD-1094, Mobile Fleet Maintenance, using a shop repair order (SRO) as a supplement to the requirements of STD-101. Work not fitting the definition of MRT is performed using the established STD-101 process in conjunction with the Passport work order system. The SRO is used as the authorizing document to initiate and record all maintenance activities performed on all vehicles and equipment. The maintenance supervisors, foremen, and service writers collectively act as the coordinators for all SROs performed. Each SRO is reviewed for completeness and evaluated for any deferrals and prioritization. The maintenance foreman will normally prioritize and assign all SROs. One-hour SROs are performed at the discretion of the individual mechanic. Individual SROs are not identified at the POD. As MRTs, it is not a requirement of STD-101 or 1094 to identify these tasks individually. The POD does categorize SROs as either corrective or preventative maintenance and as either light or heavy shop work for the determination of where overtime resources will be required. These procedures were found to be adequate for integrating work planning at the individual maintenance and activity level. The process to gain authorization to conduct work or activities is adequately described in these procedures.

The analysis of hazards and development of controls for SROs is based on the hazard analysis matrix (HAM) approach defined in STD-101 for MRT defined work. Fleet Operations has developed a functional task matrix as an appendix to STD-1094. This matrix identifies the scope of work to be performed (e.g., brake work), the hazards associated with the work and the mitigation controls for those hazards (e.g., the work practices section of STD-1094, applicable exposure assessments, job safety analysis), the review frequency for the hazard mitigation controls (e.g., new employee or one year since last performance of the task), additional controls not specified in the work practice section of STD-1094 (e.g., brake inspector certification), and the feedback and process improvement mechanism (e.g., weekly work group meeting). Maintenance supervisors and foremen review the scope of work identified on SRO's against the matrix to identify, analyze and control the hazards associated with the work. The foreman are then required to record on the SRO from the matrix review any associated job safety analysis, permits, or other restrictions, limitations, precautions, and or controls required to perform the work. A pre-job briefing is then conducted with the mechanics to ensure the scope of work and the controls identified are understood and complete. The planning process was found to fully analyze

hazards associated with the activity and to develop appropriate controls. The procedures also adequately ensure that the facility or activity and its associated work force are in a state of readiness to perform the work when authorized. In conjunction with the planning process safety requirements are adequately identified and integrated into the performance of work and workers actively participate in the planning process.

Fleet Operations has established several performance indicators and measures used to provide improvement. Shop turnaround for buses and light vehicles is tracked monthly by type of work, service or repair, and duration in the shop, same day, one day, two days, three days, or excess. Maintenance type, preventative versus corrective, is tracked monthly. Bus passenger load factors and cost per revenue passenger is tracked monthly. Specific indicators that include safety are the monthly safety severity index and the bus accidents per million mile indicators. Adequate performance measures and indicators that include safety performance are established.

Fleet Operations personnel responsible for the preparation, authorization, performance, and measurement of work performance were interviewed. Included in these interviews were the light and heavy equipment foreman and mechanics assigned to them. These personnel demonstrated a complete knowledge of the preparation and maintenance of the work control documents, hazard identification and control documents, plan-of-the-day meetings, pre-job briefings, and the actual conduct of the work or activities. Personnel responsible for the controls such as exposure assessments and job safety analysis who were interviewed included the industrial hygienist and safety engineer and their immediate supervisors. Again all demonstrated a complete knowledge of the process. Interviews with bus drivers and mechanics demonstrated adequate worker involvement in each step of the process.

The actual authorization and performance of individual work or activities by Fleet Operations mechanics was observed to assess the implementation of the process. Several SROs in both the light and heavy vehicle repair shops were reviewed for completeness and the activities observed. These observations included pre-job briefings, foreman authorization to proceed with work, command and control of the work, and safety requirement review by the work activity performers. These activities were found to be compliant with the STD-1094 process. The Fleet Operations plan-of-the-day meeting and Operational Safety Board meeting were observed and found to be adequate.

Work performed at IRC falls into two categories, maintenance or research. All maintenance work is performed using the established STD-101 process in conjunction with the Passport work order system. Research work is conducted using MCP-3571, Independent Hazard Review.

Idaho Falls Facilities (IFF) maintenance work at the IRC is initiated, planned, scheduled, and worked using the established STD-101 process in conjunction with the Passport work order system. A work control form (WCF) is submitted by any

employee, a hazard profile screening checklist (HPSC) performed, a priority established (the majority at IFF are low), a team walk-down performed to validate the HPSC, the HPSC is approved by the IFF Maintenance Manager, a Passport Work Order (WO) is developed, reviewed, and approved, the WO is scheduled on the POD, a pre-job brief is conducted by the foreman in conjunction with the planner, work is authorized and performed, and finally feedback is initiated and the WO is closed out. This process was found to be adequate for integrating work planning at the individual maintenance and activity level, to fully analyze hazards associated with the activity and to develop appropriate controls, to ensure that the facility or activity and its associated work force are in a state of readiness to perform the work when authorized, and that the mechanism to gain authorization to conduct work or activities is adequately described. Also safety requirements are adequately identified and integrated into the performance of work and workers actively participate in the planning process.

IFF has established several performance indicators and measures used to provide improvement. These indicators are reported as monthly performance models. These models are grouped into categories such as ESH&Q, Lockout/Tagout (LO/TO), Work Control, Occurrence Reports, and some standard industrial building utilization and utilities type measures. ESH&Q measures include the safety severity index, ES&H assessments scheduled versus completed, and audit findings versus audit findings previously self-identified. LO/TO measures include logbook errors, tag completeness, number of LO/TO's properly authorized, and number of assessments performed. Work Control measures include cycle time, backlog hours, and PM completion percentage. The specific indicator that includes safety is the monthly safety severity index. Adequate performance measures and indicators that include safety performance are established.

IFF personnel responsible for the preparation, authorization, performance, and measurement of work performance were interviewed. Included in these interviews were the IFF Site Area Director, IFF Operations Manager, IFF Maintenance Manager, IFF Facility Operator (who is also a planner), an electrician, a mechanic, and a safety engineer. These personnel demonstrated a complete knowledge of the preparation and maintenance of the work control documents, hazard identification and control documents, plan-of-the-day meetings, pre-job briefings, and the actual conduct of the work or activities. These personnel are also responsible for the controls such as PPE and job safety analysis. Interviews with the planner, electrician, mechanic, and safety engineer demonstrated adequate worker involvement in each step of the process.

The actual authorization and performance of individual work or activities by IFF maintenance electricians, mechanics, and carpenters was observed to assess the implementation of the process. WOs which performed electrical distribution modifications and trouble shooting and repair for laboratory areas were reviewed for completeness and the activities observed. These observations included pre-job briefings, foreman authorization to proceed with work, command and control of the work, and safety requirement review by the work activity performers. These

activities were found to be compliant with the STD-101 process. The IFF plan-of-the-day meeting was observed and found to be adequate.

IRC research work is conducted per the requirements of MCP-3571, Independent Hazard Review. MCP-3571 implements the Integrated Safety Management requirements for research work hazard analysis and control. The Principle Investigator (PI) or researcher initiates work by completing a Hazard Mitigation Guide (HMG) and an Independent Hazard Review Group (IHRG) Checklist and Hazard Mitigation Plan (IHRG document). The PI then request Lab Custodian concurrence for the IHRG document that the proposed activity is compatible with any other projects in the lab. The PI next obtains his work organization manager's review of the document for completeness and concurrence with the proposed scope of work. At this point the document may take two different approval paths depending on the quantity and significance of the hazards identified in the HMG.

If there are less than 5 hazards identified and none are significant the document can proceed with an abbreviated hazard review and work authorization dependent only upon the work organization manager and the IRC Facility Manager approval. The approved document is sent to the lab custodian for record keeping in the lab custodian notebook. The PI is tasked with ensuring that all involved project personnel are knowledgeable with the content and requirements of the IHRG document.

If the abbreviated hazard review criteria are not met, then the document is subject to a full hazard review. Full reviews consist of the IRC facility manager appointing an IHRG chair who reviews the document for completeness and complexity. The chair then selects a review group to review and comment on the document to ensure hazards have been fully analyzed and controls developed. Any issues raised during the review are resolved between the PI and the reviewers using the chair as a facilitator. The work organization manager and IRC Facility Manager will then determine that all hazards are identified and adequately addressed prior to approving the document and authorizing work. The approved document is sent to the lab custodian for record keeping in the lab custodian notebook. The PI is tasked with ensuring that all involved project personnel are knowledgeable with the content and requirements of the IHRG document.

The IHR process also addresses the review of significant changes to the proposed scope by using the same processes identified for the full hazard review. Work organization managers review IHRG documents annually and a full hazard review is required every three years for ongoing research activities.

The IHRG process was found to be adequate for integrating research at the individual activity level, to fully analyze hazards associated with the activity and to develop appropriate controls, to ensure that the facility or activity and its associated work force are in a state of readiness to perform the work when authorized, and that the mechanism to gain authorization to conduct research is adequately described. Also

safety requirements are adequately identified and integrated into the performance of research and researchers actively participate in the planning process.

The IRC has several performance indicators and measures used to provide improvement. These indicators are reported monthly. These indicators are grouped into categories such as Environmental Management, Quality Assurance, Worker Safety and Health, Emergency Preparedness, Conduct of Operations, Issues Management Implementation, and ISMS. The ISMS measure is a status of ISMS implementation activities. The specific indicator that includes safety is the monthly safety severity index. Adequate performance measures and indicators that include safety performance are established.

IRC personnel responsible for the preparation, authorization, performance, and measurement of research activities were interviewed. Included in these interviews were the IRC Site Area Director, Facility Manager, Laboratory Managers, Principle Investigators, Laboratory Custodians, and Principle Engineering Technicians. These personnel demonstrated a complete knowledge of the preparation and maintenance of the IHRG documents, hazard identification and control documents, and the actual conduct of research activities. Interviews with the PI's, technicians, and lab custodians demonstrated adequate worker involvement in each step of the IHRG process.

The actual authorization and performance of individual work or activities by IRC researchers was observed to assess the implementation of the process. IHRG documents for thermite, heavy chemistry, and biological research activities were reviewed for completeness. Activities associated with heavy chemistry and biological research were observed. These activities were found to be compliant with the IHRG process. An IHRG meeting was observed and found to be adequate.

Conclusion: The objective has been met. The Big Shop and IRC have established and utilized an integrated process to effectively plan, authorize, and execute the identified work for their facilities and activities.

Issue(s)

- None

Strength(s)

- None

Inspector_____ Michael D. Hicks	**Team Leader**_____ Joseph Arango

Sub-Team: RWMC/WERF	**FUNCTIONAL AREA: DOE** **DATE**: September 21, 1999

OBJECTIVE: DOE.1 DOE procedures and mechanisms are established to help ensure that hazards are analyzed, controls are developed, work is formally and appropriately authorized and performed safely and feedback and improvement programs are in place and effective. DOE line managers are using these processes effectively, consistent with FRAM and FRA requirements, and are involved in the review of safety issues and concerns and have an active role in authorizing and approving work and operations. (CE II-7, CE II-8)

Criteria:

19. DOE procedures and/or mechanisms are in place that establish a process for confirming readiness and authorizing operations.

20. DOE procedures and/or mechanisms are established to help ensure that the safety management system is properly implemented and line management oversight of the contractor's worker, public, environment, and facility protection programs is performed.

21. DOE procedures and/or mechanisms require day-to-day operational oversight of contractor activities through Facility Representatives.

22. DOE procedures and/or mechanisms are established to help ensure the implementation of quality assurance programs and ensure that contractors implement quality assurance programs.

23. DOE procedures and/or mechanisms are in place to help ensure that the contractor's hazard analysis covers the hazards associated with the work and is sufficient for selecting standards.

24. DOE procedures and/or mechanisms are in place in which DOE directs the contractor to propose facility or activity-specific standards tailored to the work and the hazards. DOE procedures require that appropriate safety requirements in necessary functional areas are included in contracts.

25. DOE procedures and/or mechanisms are in place that direct DOE line manager oversight to ensure that implementation of hazards mitigation programs and controls are established.

26. DOE procedures and/or mechanisms are in place that direct the preparation of the authorization basis documentation and oversee the implementation by the

contractor. Procedures for development, review, approval, maintenance, and utilization of Authorization Agreements are implemented.

27. DOE procedures and/or mechanisms require that contractors develop a lessons-learned program and monitor its implementation. A process is established for reviewing occurrence reports and approving proposed corrective action reports. A DOE process is established and effectively implemented to continuously improve efficiency and quality of operations. Corrective actions are developed, implemented, and tracked in order to profit from prior experience and the lessons learned. DOE provides effective line oversight of the contractor's self-assessment programs.

Approach

NOTE: In general, DOE-ID direction to the contractor to carry out DOE requirements is through List A and List B of contract DE-AC07-94ID13223, including associated contract modifications. Review of contract DE-AC07-94ID13223 should provide proof that DOE-ID has directed the contractor to implement many of the criteria stated above. Additionally, DOE-ID has written an ID ISMS Description Document, ID Guide 450.X-X, which explains the DOE-ID ISMS. Review of ID Guide 450.X-X should provide information on how ID implements its ISM system, and how DOE-ID activities integrate with those of LMITCO. The following Record Review section highlights specific ID Notices tailored to the criteria above.

Record Review: Review ID Notice 411.1, "DOE Integrated Safety Management Functions, Responsibilities and Authorities" to verify that line management is responsible for safety, and that their responsibility is clearly defined in roles and responsibilities. Review ID Notice 425.1, "Startup and Restart of Nuclear Facilities" to determine if a process for confirming readiness and authorizing operations is in place, and review documentation from a startup or restart review to determine the adequacy of implementation. Review ID Notice 450.A3, "Environment, Safety, Health and Quality Assurance Oversight" and ID Order 220.X, "Independent Assessment" and sample select surveillance reports to determine if mechanisms are established to help ensure line management performs oversight of the contractor's ISMS, (specifically including hazard mitigation programs and controls, and self-assessment programs) to verify protection of workers, public, and the environment. Review the Quarterly Oversight Schedule to determine if the oversight is balanced with risk and priority of mission. Review Facility Representative Position Descriptions and Performance Agreements to determine if mechanisms are in place to require day to day operational oversight by FRs. Review ID Order 414.1, "Quality Assurance Program" and individual ID AM organization Quality Program Plans (QPPs) to determine if they help ensure the implementation of quality assurance program by ID and LMITCO. Review ID Notice 420.A1, "Safety Basis Review and Approval Process" to determine if this mechanism directs the preparation of authorization basis documentation, helps ensure that the contractor's hazard analysis

covers the hazards associated with the work, and is sufficient for directing the selection of standards tailored to the facility work and hazards. Review ID Notice 450.C, "Authorization Agreements" to determine if it is sufficient to direct the development, review, approval, maintenance and utilization of Authorization Agreements. Review facility Authorization Agreement(s) to determine if ID Notice 450.C was properly implemented. Review the approved and in process facility hazards analysis documentation to verify that contractor procedures and mechanisms have been properly reviewed and approved. Review ID Order 210.X, "DOE-ID Performance Measure, Trend Analysis, and Communications" to determine if this mechanism requires contractors to develop a lessons-learned program and monitor its implementation. Review ID Order 410.A, "DOE-ID Issue Management" to determine if ID has a process to ensure corrective actions are developed, implemented, and tracked. Review the results of the implementation of ID Order 410.A to evaluate adequacy of implementation to continuously improve efficiency and quality of operations. Review ID O 220.X, "DOE-ID Self Assessment" to determine the adequacy of the ID management self-assessment program.

Interviews: Interview the Facility Director and Site Area Director and discuss work authorization and performance to determine if there are adequate mechanisms to ensure that work is properly authorized at all levels. Determine if worker safety is perceived as an integral part of the work authorization process and that workers are involved in issue resolution if appropriate. Interview DOE and Contractor Line Management personnel at all levels and discuss the oversight programs. Discuss the Facility Representative (FR) programs with facility representatives and contractor personnel to determine if the FR program is effective. Discuss oversight and assessment programs with DOE staff from the Facility, Operational Safety Division, Environmental Programs and Settlement Agreement Division, and the Policy and Assurance Division who perform ES&H management and supervision assignments. During interviews, verify understanding of line management responsibility for safety and understanding of clear roles and responsibilities. Interview Facility Director, Facility Engineer(s), and Operational Safety Division Director to discuss the review and approval of the results of the contractor's identification, analysis, and categorization of hazards to assess their understanding of the procedures and the underlying principles and requirements. Interview Facility Director, Facility Engineer(s), and Operational Safety Division Director to discuss the review and approval of the standard selection process including the approval of the authorization protocols and agreements. Interview DOE personnel responsible for administering the issues management program and those DOE line managers who provide oversight of the contractor's self-assessment programs. Interview DOE-ID management personnel responsible for the DOE-ID management self-assessment program.

Observations: Observe selected facility representative and DOE staff oversight activities. Observe conformance to ID N 450.A3, "Environment, Safety, Health and Quality Assurance Oversight." Observe the review of Occurrence Reports by Facility Representatives to assess conformance to DOE Order 232.1, "Occurrence Reporting and Processing of Operations Information." Observe the weekly Facility Director

conference call, Facility Director staff meetings, and interface with the contractor e.g., performance monitor meetings) to determine line management understanding and awareness of operational activities.

Record Review

- ID N 411.1, Integrated Safety Management, Functions, Responsibilities, and Authorities Manual
- DOE O 425.1A, Startup and Restart of Nuclear Facilities
- ID N 425.1, Startup and Restart of Nuclear Facilities
- ID O 450.A Line Environment, Safety, Health and Quality Assurance Oversight
- ID O 220.B, Independent Assessment
- ID O 414.1, Quality Assurance
- ID N 420.A1, Safety Basis Review and Approval Process
- ID N 450.C, Authorization Agreements
- ID O 210.A, DOE-ID Performance Measure, Trend Analysis and Communication
- ID O 410.A, DOE-ID Issue Management
- ID O 220.A, DOE-ID Self-Assessment
- ID G 450.E-1, DOE Idaho Operations Office, Integrated Safety Management System Guide
- ID O 251.1, ID Directives System
- U.S. DOE OU 7-10 Alternative Staged Interim Action Stage I Phase I, Line Management Assessment Implementation Plan
- OPE M 410.C-1, OPE Operational Excellence Manual
- Surveillance Report (self-assessment), PAD Gap Analysis, 8/2/99 – 8/23/99
- Safety Document Review Plan for OU 7-10 Staged Interim Action Project-Stage I, Phase II and Stage II
- Integrated ESH&QA Oversight Schedule
- Oversight Report, RWC-1999-12, General Surveillance, April 1999
- Oversight Report, RWC-1999-15, Emergency Preparedness Drill, April 1999
- Oversight Report, RWC-1999-4, Missed Quarterly RCRA Inspection, 2/8/99
- ISMS Phase II Verification Safety Analysis Conformance Matrix, RWMC/WROC
- Facility Representative Position Description
- DOE Performance Agreements
- Memorandum, Transmittal of DOE-ID Surveillance regarding the risk of lead and cadmium exposures at the WERF Incinerator Bag-house (RWMC-98-029)
- Authorization Agreement for the Radioactive Waste Management Complex
- Waste Experimental Reduction Facility, Safety Analysis Report
- Form 325.01, Employee Position Description, WROC/PBF Site Area Director
- Employee Training Plan, WROC/PBF Site Area Director
- Individual Training History, WROC/PBF, Site Area Director
- Form 325.01, Employee Position Description, WERF, ESH&QA Manager
- Individual Training Plan, WERF ESH&QA Manager

- Employee Training History, ESH&QA Manager

Interviews Conducted

- DOE ID RWMC/WROC Facility Director
- DOE ID RWMC/WROC Deputy Facility Director
- DOE ID Operational Safety Deputy Director
- DOE ID Policy and Assurance Director (acting)
- DOE ID RWMC/WROC Facility Representative
- DOE ID RWMC/WROC Facility Engineers (3)
- WROC Site Area Director
- WERF Operations Supervisor
- Mixed Waste/Hazardous Waste Operations Supervisor
- RWMC Site Area Director
- RWMC ESH&QA Manager
- RWMC Maintenance Supervisor
- RWMC Nuclear Facility Manager
- RWMC Operations Supervisor
- LMITCO Director of Training

Observations

- LMITCO INEEL and DOE ID ISMS Status Presentations (series)
- INEEL ES&H and Quality (ESH&QA) Training, with written examination
- INEEL General Employee and INEEL Access Training, with written examination
- WERF Plan of the Day
- DOE ID RWMC/WROC FD Weekly Conference Call
- DOE ID FD Weekly Facility Director's Conference Call
- RWMC Plan of the Day
- Walkdown of the RWMC Facilities with Maintenance Supervisor
- Walkdown of the WERF Facilities with Facility Manager
- WERF Pre-job Briefing

Discussion of Results

The DOE-ID RWMC/WROC organization has adequately implemented ISMS to execute their responsibilities and provide oversight for the contractors' ISMS at RWMC/WERF. The DOE-ID RWMC/WROC organization can provide the oversight for the five ISMS Core Functions: (1) Define Scope, (2) Identify Hazards, (3) Implement Controls, (4) Perform Work, and (5) Feedback and Improvement.

Throughout the DOE personnel interviews, the discussions indicated that the DOE-ID RWMC/WROC line organization demonstrated teamwork with the

RWMC/WERF contractor personnel, and their strong sense of line management responsibility for safety.

The records reviewed included the DOE-ID ISMS description and supporting documentation, major DOE-ID RWMC/WERF documentation for the supporting assessment and oversight programs, and documentation associated with safety, hazards, maintenance, and operations at RWMC/WERF. This documentation provides adequate and consistent guidance delineating the DOE-ID RWMC/WROC organization's roles and responsibilities for safety and oversight at RWMC/WERF.

The review of this documentation, combined with the results of the subsequent personnel interviews indicated that DOE-ID RWMC/WROC has sufficient processes in place to confirm readiness prior to authorizing operations. The review of records included samples of the DOE-ID RWMC/WROC surveillances and assessments of operations and maintenance at the RWMC/WERF facilities.

The review of those records indicated that DOE-ID RWMC/WROC is actively involved in the preparations for work, the execution of the work, the assessment of readiness, and the approval of operations. The DOE-ID RWMC/WROC assessments of readiness are performed in accordance with the DOE-ID directives and processes, using approved assessment plans, with adequate formality and rigor to ensure safe operations.
DOE-ID documentation adequately outlines the DOE-ID RWMC/WROC processes for line management oversight of the RWMC/WERF facility programs, and the day-to-day operational oversight by the DOE-ID RWMC/WROC Facility Representatives (FRs). The results of the record reviews indicated that these processes have been adequately implemented. The documentation reviewed included the results of assessments, and operational and maintenance activities for RWMC/WERF. The review of records, combined with the personnel interviews, indicated that the Facility Director, Deputy Facility Director, Facility Representatives, and Facility Engineers are adequately involved in RWMC/WERF operations.

DOE-ID is now completing the development and implementation of the documentation and execution of improvements for ISMS, but all of these efforts have not yet been completed. For example, DOE-ID action is still in progress to improve areas such as Quality Assurance (QA), the DOE-ID Directives System, and DOE-ID Independent and Self-Assessment efforts. However, DOE-ID RWMC/WROC does have a Quality Assurance Program Plan which is in the Operational Excellence Manual OPE M 410.C-1, Appendix A. They have also begun efforts to implement some of the new processes such as the DOE-ID Issues Management system and the related Oversight Information Management System (OIMS).

The requirements for independent oversight are established in DOE Order 414.1, Quality Assurance, and flow down through the local ID Order 414.1. The responsibility for independent oversight at DOE-ID is assigned to the Policy and

Assurance Division (PAD) of the Office of Assurance and Resource Management by ID Order 220.B, Independent Oversight. This order was approved on 9/10/99, and replaced Chapter 6 of ID Notice 450.A3.

ID Order 220.B identifies PAD as the organization within DOE-ID that has sufficient authority and freedom from the line to carry out the independent review responsibilities. During the past year, one individual (in Industrial Hygiene) in the PAD organization has been assigned approximately half time to provide programmatic support and assistance in the Operational Safety Division (OSD). The OSD carries out line responsibilities within the Office of Program Execution. While it is noted that the OSD has just recently hired an industrial hygienist to take over the programmatic responsibilities, the sharing of programmatic experts compromises the independence of the PAD organization, and should be avoided in the future. (RDOE1-1)

Under ID Order 220.B, and the predecessor requirements, PAD is required to issue an annual assessment schedule that is coordinated with line management oversight activities. The last assessment schedule was issued in June of 1998. Following the TRA CO_2 Accident at the Test Reactor Area in July 1998, resources within PAD were focused on implementation of corrective actions from the TRA accident investigation and the implementation of the ID Integrated Safety Management System. PAD was responsible for revising the ID directives process, assisting in the alignment of management processes within the office, development of the ID quality assurance program, and development of an ID issue management process.

Although PAD continued to perform ad hoc assessments and oversight, an annual assessment plan was not issued or revised. A self-assessment was performed in August 1999 by PAD to identify requirements in the recently adopted OARM Quality Program Plan that have not been adequately implemented. The self-assessment properly concluded that additional procedures needed to be developed in the OARM Assistant Manager's manual to fully implement the independent assessment requirements such as assessment scheduling, and a qualification process for assessors. This deficiency is being tracked as Issue No. 38 in the ID Issue management process.

The DOE-ID Independent Assessment program has been provided for previously in ID N 450.A3 and now in the recently approved ID O 220.B. However the execution of a truly independent assessment process has not been demonstrated. (RDOE 1-2)

DOE-ID procedures and mechanisms are in place to help ensure that the contractor's hazard analysis covers the hazards associated with the work and are sufficient for selecting standards. A more detailed discussion on the adequacy of these documents and programs is described in the RHAZ1 Assessment Form.

DOE procedures and mechanisms are in place that direct DOE line manager oversight to ensure that implementation of hazards mitigation programs and controls are established. Personnel interviewed included DOE-ID and DOE-ID

RWMC/WROC personnel, senior INEEL contractor line management and support personnel, and line management and operational personnel at RWMC/WERF. These interviews, discussions, and seminars focused on the RWMC/WERF ISMS systems and supporting processes, DOE-ID RWMC/WROC systems and processes for assessment and oversight programs, and the processes directly associated with safety, hazards, maintenance, and operations at RWMC/WERF.

The results of these interviews supported the conclusions reached by the review of records. Overall the DOE-ID RWMC/WROC has adequate guidance and processes in place to execute their roles and responsibilities for ISMS safety and oversight at RWMC/WERF.

In preparation for the M&O contractor transition at the end of this month, the new contract's List A and List B is being revalidated, and the Authorization Agreements for the new contractor are being reviewed. The Authorization Agreement review and approval process is implemented per ID N 450.C and the OPE Operational Excellence Program Manual 410.C-1. The DOE-ID RWMC/WROC organization has sufficient processes and mechanisms in place to oversee the new M&O contractor's implementation of their requirements during the transition at RWMC/WERF.

The DOE-ID documentation provides sufficient guidance for the implementation of feedback and continuous improvement processes at RWMC/WERF and these processes are adequately implemented. However, a sampling of the results of RWMC/WERF assessments and self-assessments indicated that these processes are still improving, and there is still additional room for improvement in the areas of discrepancy identification, correlation, tracking, corrective actions, and trending, as the contractor improves their self-assessment processes.

Conclusion: The objective has been met. The DOE-ID RWMC/WROC organization has adequately implemented their ISMS to execute their responsibilities. DOE-ID RWMC/WROC can provide adequate oversight for the contractor's ISMS at RWMC/WERF and for all five of the ISMS Core Functions.

Issue(s)

- ID Order 220.B requires that PAD maintains its independence from the line organizations, including an independent reporting chain, in order to carry out its independent assessment responsibilities. It was found during this review an instance where this independence has not been maintained. (RDOE1-1)

- The DOE-ID Independent Assessment program has been provided for previously in ID N 450.A3 and now in the recently approved ID O 220.B. However the execution of a truly independent assessment process has not been demonstrated. (RDOE 1-2)

Strength(s)

- None

Inspector_____ Glenn M. Morton, P.E.	**Team Leader**_____ Joseph Arango

Sub-Team: RWMC/WERF	**FUNCTIONAL AREA: HAZ** **DATE**: September 21, 1999

OBJECTIVE: HAZ.1 The full spectrum of hazards associated with the Scope of Work is identified, analyzed, and categorized. Those individuals responsible for the analysis of the environmental, health and safety, and worker protection hazards are integrated with personnel assigned to analyze the processes. An integrated process has been established and is utilized to develop controls that mitigate the identified hazards present within a facility or activity. The set of controls are used to ensure adequate protection of the public, worker, and the environment and are established as agreed upon by DOE. These mechanisms demonstrate integration, which merge together at the workplace. (CE II-2, CE II-3)

Criteria

14. Procedures and/or mechanisms are in place and utilized by personnel to ensure hazards associated with the work throughout the facility have been identified and analyzed. The resulting documentation is defined, complete, and meets DOE expectations. The execution of these mechanisms ensure personnel responsible for the analysis of environmental, health and safety concerns are integrated with those assigned to analyze the hazards for the facility or activity. The use of these mechanisms ensure direction and approval from line management and integration of the requirements.

15. Procedures and/or mechanisms are in place and utilized by personnel that describe the interfaces, roles and responsibilities of those personnel who identify and analyze the hazards of the scope of work. Personnel assigned to accomplish those roles are competent to execute those responsibilities.

16. Procedures and/or mechanisms are in place to develop, review, approve and maintain current all elements of the facility Authorization Basis Documentation with an integrated workforce.

17. Procedures and/or mechanisms that identify and implement appropriate controls for hazards mitigation within the facility or activity are developed and utilized by workers and approved by line managers. These procedures/mechanisms reflect the set of safety requirements agreed to by DOE.

18. Standards and requirements are appropriately tailored to the hazards.

19. Procedures and/or mechanisms are in place to develop, maintain, and utilize Authorization Agreements.

20. Procedures and/or mechanisms are in place to effectively and accurately implement all aspects of the Authorization Basis.

Approach

Record Review: Review the documents that govern the conduct, review, and approval of facility hazard analysis such as Technical Safety Requirements MCP-2450 “Technical Safety Requirements”, Fire Hazards Analysis (FHA) MCP-579 “Fire Hazards Analysis”, Criticality Safety Evaluation (CSE) PRD-112 “Criticality Safety Program Requirements”, Safety Analysis PDD-22 “Safety Analysis” and PRD-164 ”Safety Analysis for Non-Nuclear, Radiological, and Other Industrial Facilities”, and MCP-3680 “Environmental Aspect Evaluation and Maintenance” (EAE) to verify that these documents conform to the hazard analysis requirements. Review a sample of hazard control documents to verify safety controls are provided for the hazards identified and that the control strategy encompasses a hierarchy of 1) hazard elimination, 2) engineering controls, 3) administrative controls, and 4) personnel protective equipment. Typical documents include Preliminary Hazards Review (PHR), Preliminary Safety Analysis (PSAR), Safety Analysis Reports (SARs), Technical Safety Requirements (TSRs), Health and Safety Plans (HASPs), Auditable Safety Analysis (ASA), Fire Hazards Analysis (FHA), Criticality Safety Evaluation (CSE), etc. Review procedures and perform field verification for activities/processes such as STD-101 “Integrated Work Control Process,” Radiological Work Permits (MCP-7 “Radiological Work Permit”), operations procedures (such as MCP-3480 “Environmental Instructions for Facilities, Processes, Materials, and Equipment), Hazards Identification and Control documents (MCP-3562 “Hazards Identification and Control of Operational Activities” or MCP-3571 “Independent Hazard Review”) to ensure accurate and effective implementation of Authorization Basis documentation requirements. For nuclear facilities, the respective Authorization Agreement describes facility management processes and procedures required for safe operation of the facility. The Unreviewed Safety Question process, described in MCP-123, “Unreviewed Safety Questions,” is used to ensure activities remain within the facility safety envelope. Where appropriate, review the process used to resolve Unreviewed Safety Questions (USQs) to ensure new tasks are being evaluated against the approved authorization basis as required by MCP-123, “Unreviewed Safety Questions.” Review completed or in progress implementation documentation.

Interviews: Interview personnel responsible for the identification and analysis of work hazards including personnel responsible for ALARA review requirements. In nuclear facilities, for example, this should include personnel responsible for USQ determination, procedure technical reviews, etc. Interview personnel responsible for developing and implementing hazard controls and/or Authorization Basis Documentation at the facility level. This should include personnel such as those responsible for SAR/TSR, FHA, CSE, and EAE preparations and implementation.

Observations: If possible, observe the actual preparation and field implementation of the analysis of hazards. In nuclear facilities, this should include an Unreviewed Safety Question Determination (USQD), preparation of a JHA, SAR/TSR, or Criticality Safety Evaluation, etc. Observe the actual processes development, review, approval, and implementation of SAR/TSR, AA, and other Authorization Basis Documents as available. Where appropriate, observe that new tasks are being evaluated to determine if the tasks fall within the safety envelope described in the approved authorization basis as required by MCP-123, "Unreviewed Safety Questions."

Record Review

- PDD-1004, INEEL Integrated Safety Management System
- MCP-3562, Hazard Identification, Analysis & Control of Operational Activities
- PRD-5042, Facility Hazard Identification
- PRD-164, Safety Analysis for Other than Nuclear Facilities
- STD-101, Integrated Work Control Process
- Form 451.01, Environmental Checklist
- List 96, Environmental Aspects List
- List 99, Facility Hazards Identification And Control Information List
- RWMC Safety Analysis Report
- RWMC Facility Hazards List
- RWMC Authorization Agreement
- RWMC RCRA Part B Permit
- RWMC Air Permits
- RWMC Stormwater Pollution Prevention Plan
- MCP-123, Unreviewed Safety Questions
- MCP 3480, Environmental Instructions for Facilities, Processes, Materials, and Equipment
- MCP-540, Graded Approach and Quality Level Assignment
- MCP-1752, RWMC Facilities Responsibilities
- MCP-1762, TSA Operating Requirements
- MCP-1791, Deputy Area Director Responsibilities
- MCP-1764, RWMC Operating Requirements
- MCP-2450, Technical Safety Requirements
- MCP-579, Performing Fire Hazards Analysis
- PDD-22, Safety Analysis
- MCP 3591, Maintenance and Use of Facility Hazards Lists
- MCP-1761, ESH&QA Department Roles and Responsibilities
- MCP-1775, RWMC Self-Assessment Program
- White Paper – Application for the Risk-Based Storage of PCB Remediation Waste at the INEEL RWMC TSA-RE
- RWMC Post Job Review, Round Sheets
- WERF Safety Analysis Report
- MCP-3567, Authorization Agreement With Authorization Basis List

- WERF General Area JSA
- WERF Safety Analysis Report
- DOE EM Standard 5502-94, Hazard Baseline Documentation
- DOE Order 5480.4, Environmental Protection, Safety, and Health Protection Standards
- WROC MCP-WROC-COO-01 Appendix B, Staffing Requirements
- WERF JSA's – TPR-WERF-3.1.9.4, 3.2.4.13, 3.2.4.10, 3.2.2.7, 3.1.2.4
- WERF Procedure review packages – 3.2.9.1, 3.1.1.4, 3.1.1.3, 3.1.7.22.2.4.10
- WERF Activity Based Document Review Schedule
- WERF Permit to Construct an Air Pollution Emitting Source
- RCRA Interim Status Contingency Plan for the WERF
- RCRA Interim Status Training Plan for the WERF
- RCRA Interim Status Waste Characterization Plan
- WERF Facility Hazards List
- WERF List 99 Context Diagrams

Interviews Conducted

- LMITCO EMS Manager
- RWMC ESH&QA Manager
- LMITCO NEPA Program staff scientist
- RWMC Fire Protection Engineer
- RWMC Industrial Hygienist
- RWMC Environmental Tech Lead
- RWMC Maintenance Supervisor
- RWMC Safety Engineer
- RWMC Radiological Controls Supervisor
- DOE-ID RWMC Facility Manager
- DOE-ID RWMC Facility Representative
- LMITCO ER ESH&QA Manager
- LMITCO ER Nuclear Safety Supervisor
- LMITCO RCRA Permit Supervisor
- LMITCO Safety Engineering Supervisor
- LMITCO Safety Engineer
- WERF Safety Engineers –3
- WERF Shift Supervisor
- WERF Environmental Tech Leads –2
- WERF Radiological Engineer
- WERF Fire Protection Engineer
- WERF Occupational Safety Specialists -2
- WERF Maintenance Supervisor
- WROC ESH&QA Manager

Observations

- RWMC POD meeting
- RWMC OSB meeting
- WERF POD meeting
- WERF Shift Turnover meeting
- WERF Post Job Briefing

Discussion of Results

RWMC and WERF have comprehensive procedures and mechanisms in place to ensure environmental, safety, and health hazards associated with work throughout each facility have been identified and analyzed. These procedures and mechanisms are rigorous and integrated to effect a program that meets DOE's safety expectations. Internal procedures that establish facility management roles and responsibilities provide for active participation of line management in all work control processes. An integrated flow-down of hazards related requirements to the worker level is evident.

The RWMC is a category II nuclear facility and its safety authorization basis documentation includes: a Safety Analysis Report; a RCRA Part B hazardous waste Treatment, Storage, and Disposal permit; the DOE Order 5820.2A Performance Assessment that governs waste disposal activities; Technical Safety Requirements; a Stormwater Pollution Prevention Permit; an Air Quality Permit; the Reuseable Property Recyclable Material, and Waste Acceptance Criteria; and a Consent Order issued by external regulators.

The WERF is a less than category III facility that does not require a "high level" nuclear safety program. However, WERF has comprehensive authorization basis documentation and implements a rigorous safety program. It consists of an Auditable Safety Analysis, a RCRA Part B hazardous waste Treatment, Storage, and Disposal permit application, a Health and Safety Plan (HASP), and an air emissions Permit to Construct.

Facility level safety analysis programs exist for RWMC and WERF in accordance with Company-level program requirements documents and DOE requirements. Facility Hazards Lists prepared in accordance with the company procedure exist. Standard 101, Integrated Work Control Process, and MCP-3562, Hazard Identification, Analysis & Control of Operational Activities, are the key mechanisms for the identification, analysis, and control of all safety hazards at the activity level. These mechanisms are utilized in a conscientious manner for all work. In addition, MCP-3480, Environmental Instructions for Facilities, Processes, Materials, and Equipment, and List 99, Facility Hazards List, provide detailed information to derive environmental hazards and controls. The use of these tools is not mature yet as they have just been recently completed, trained, and implemented. They do, however, fulfill the intent of ISM to fully integrate environment into all work planning and execution. Both facilities have fully integrated their RCRA Treatment, Storage, and

Disposal permit requirements/conditions into their safety basis documentation. (RHAZ1-1) Existing air permit requirements have also been integrated. These requirements/conditions represent important controls for potential environmental hazards. The Environmental Checklist (which includes all INEEL Environmental Aspects) has also been incorporated into operating procedures.

The interfacing and integration of both RWMC and WERF personnel with responsibilities for safety analysis and control at all levels within the respective facilities is very sound. Integrated, cross-functional, and multi-disciplined teams work together on Hazard Review Groups and job walk-downs. Subject matter expert/cognizant professional review of work package and safety basis documentation is part of the planning process to ensure all safety hazards are identified and controlled. Strong team spirit, pride, and safety culture was demonstrated by all personnel interviewed.

The RWMC Operational Safety Board (OSB) was operated effectively to ensure safety hazards associated with work planning and execution were identified, evaluated against the safety basis, and controlled. The OSB functions as a competent, disciplined, and rigorous work approval entity that recognizes the full spectrum of environmental, safety, and health hazards inherent to RWMC work; and has the capability/authority to effect appropriate and timely controls/solutions. (RHAZ1-2)

The RWMC Self-Assessment program (MCP-1775, RWMC Self-Assessment Program) is an important mechanism utilized to ensure safety hazards are identified and analyzed. This program was repeatedly emphasized during interviews as a crucial tool in this regard.

RWMC "legacy" issues are being managed in accordance with the Federal Facilities Compliance Act and CERCLA as INEEL Waste Area Grouping 7 (WAG 7). These issues represent potential significant hazards to personnel and the environment. All environmental restoration/remediation (ER) activities were determined through the extensive CERCLA process that includes extensive risk assessment. This process identified all hazards and mitigation/control and documented these in a Record of Decision. The Staged Interim Action project is a unique ER project that is being conducted in this manner. Even though the formal CERCLA process and its associated documentation encompass all these activities, they come under the purview of RWMC management and follow all work control mechanisms implemented by the facility. This provides an additional degree of rigor and safety confidence, and confers consistency to the work control process. An Interface Agreement exists that formalizes the interface, requirements, and responsibilities between RWMC and the ER program. WERF does not have any CERCLA governed ER activities.

WERF used DOE EM Standard 5502, Hazard Baseline Documentation, for guidance and prepared a Health and Safety Plan (HASP) in accordance with OSHA 29 CFR 1910.120(a). OSHA 1910.120 is invoked by List A, and DOE Order 5480.4,

Environmental Protection, Safety, and Health Protection Standards. Although HASPs are only required for RCRA clean-up and corrective action activities, WERF developed a HASP for their hazardous waste operations and it is part of their safety authorization basis. RWMC adequately demonstrates conformance to OSHA health and safety requirements with its suite of safety programs and documentation.

RWMC and WERF are required by DOE Order 5400.1, General Environmental Protection Program, and the INEEL Pollution Prevention Plan to maintain Waste Minimization Plans that address the generation and disposition of all facility waste streams. ISMS incorporates pollution prevention (P2) and waste minimization because it is crucial to controlling potential environmental hazards associated with waste generation and management. These Plans are in place at RWMC and WERF but little recognition of their value and relationship to ISMS is evident. Promoting P2 and further integrating P2 into the ISM fabric represents an opportunity for improvement.

RWMC and WERF delineate roles and responsibilities for safety identification within facility MCPs. All RWMC and WERF personnel have employee position descriptions that include position-specific safety functions. Initial competence and qualifications determinations are made at the Company level by processing through the formal Competence Commensurate with Responsibility program. All RWMC and WERF employees with safety management responsibilities maintain competency by implementing Individual Development Plans (IDPs) executed with their responsible management. The RWMC IDP process includes a noteworthy section that addresses core professional competency and enhancement requirements tailored to the individual. At WERF, all facility personnel receive RCRA training in accordance with a permit requirement. The training includes a segment on ISM, which promotes understanding of the integration philosophy.

Generally, facility Authorization Basis documentation is controlled and maintained current utilizing the Company Quality Manual and the Unreviewed Safety Question Process. The primary mechanism utilized by RWMC and WERF is MCP-123, Unreviewed Safety Questions. The USQ processes at both RWMC and WERF utilize an integrated team effort to ensure comprehensive and objective reviews are performed. WERF is not required to implement this procedure because of its hazard classification, but implements it nonetheless. RWMC also utilizes MCP-1776, Tracking Proposed Modifications to HWMA/RCRA Permit, to maintain RCRA currency. In fact, all new RWMC activities undergo a RCRA review, parallel to the rest of the safety reviews. RWMC also uses its mature self-assessment program (MCP-1775, RWMC Self-Assessment Program) to identify and manage safety aspects that are integral to the Authorization Basis. The process to evaluate conditions and make changes to the RWMC Record of Decision regarding legacy issue management is embedded in the formal CERCLA process and the RWMC ROD. Risk assessments are conducted in accordance with CERCLA for regulator review and approval when modifications are necessary.

Both RWMC and WERF processes implementing STD-101 and MCP-3562 include all aspects of hazard control inherent to these procedures. All environmental permit conditions/requirements are included as controls that mitigate potential hazards to the environment. Facility USQ mechanisms and Plan of the Day, Operational Safety Board, and Post-job reviews also function to identify controls.

The tailoring of standards and requirements to facility-level hazards at RWMC and WERF follows the Company requirements flow-down process. Lists A and B flow into PRD's and PDD's, MCP's, and TPR's. RWMC and WERF tailor standards and requirements initially using MCP-540, Graded Approach and Quality Level Assignment. A significant component of the tailoring process is the involvement of the subject matter expert/cognizant professional, when work package and procedure reviews are conducted. Both facilities utilize the seasoned cognizant professional to help planners evaluate and apply the applicable standards and requirements to work.

RWMC implements MCP-3567, Authorization Agreement With Authorization Basis List, to manage the Authorization Agreement (AA) process. The current Authorization Agreement for RWMC was reviewed and was appropriate. A modification to AA's was recently undertaken to address contract transition and use of this MCP was demonstrated. Because of its low hazard classification, WERF is not required to have an AA.

Conclusion: The objective has been met.

The facility-level safety identification, analysis, and control program implemented at RWMC is appropriately established to meet inherent operating hazards and classification requirements. The program flows in alignment from Company safety analysis requirements and DOE standards, and provides the basis for the incorporation into operations and maintenance activities. RWMC is a "RCRA Facility" and this provides the basis for full integration of environmental hazards into the facility program.

At WERF, the hazards control process is appropriately graded to the inherent hazards posed by WERF operations. Even though WERF is a less than category III facility, rigor and discipline are applied commensurate with higher categorizations for most program components. WERF is a "RCRA Facility" and facility environmental hazards are integrated/managed as a crucial part of the facility hazards analysis program.

A noteworthy sense of pride, teamwork, and accomplishment is demonstrated by RWMC and WERF personnel having responsibility for hazard identification, analysis, and mitigation.

Issue(s)

- None)

Strength(s)

- RWMC and WERF have fully integrated environmental permit requirements and conditions into their safety basis, ensuring that many potential environmental hazards are managed during work planning and execution. (RHAZ1-1)

- The RWMC Operational Safety Board (OSB) was operated effectively to ensure safety hazards associated with work planning and execution were identified, evaluated against the safety basis, and controlled. (RHAZ1-2)

Inspector _____ Charles Ljungberg	**Team Leader**_____ Joseph Arango

Sub-Team: RWMC/WERF	**FUNCTIONAL AREA: MG.1** **DATE**: September 21, 1999

OBJECTIVE: MG.1 An integrated process has been established and is utilized to identify and prioritize specific mission discrete tasks, mission process operations, modifications and work items. An integrated process has been established that ensures that mechanisms are in place to ensure continuous improvements are implemented through an assessment and feedback process, which functions at each level of work and at every stage in the work process. (CE II-1, CE II-5)

Criteria

15. Procedures and/or mechanisms that require line management to identify and prioritize mission-related tasks and processes, modifications, and work items are in place and utilized by personnel.

16. Procedures and/or mechanisms are in place and utilized by personnel to ensure identified work (i.e., mission-related tasks and process, processes or facility modification, maintenance work) can be accomplished within the standards and requirements identified for the facility.

17. Procedures and/or mechanisms are in place and utilized by personnel to collect feedback information such as self-assessment, monitoring against performance objectives, occurrence reporting, and routine observation. Personnel assigned these roles are competent to execute these responsibilities.

18. Procedures are in place that develop feedback and improvement information opportunities at the site and facility levels as well as the individual maintenance or activity level. The information that is developed at the individual maintenance or activity level is utilized to provide feedback and improvement during future similar or related activities.

19. Procedures and/or mechanisms are in place and utilized by managers to identify improvement opportunities. Evaluation and analysis mechanisms should include processes for translating operational information into improvement processes and appropriate lessons learned.

20. Procedures and/or mechanisms are in place and utilized by managers to consider and resolve recommendations for improvement, including worker suggestions.

21. Procedures and/or mechanisms are in place, which include a process for oversight that ensures that regulatory compliance is maintained.

Approach

Record Review: Review the facility or activity long-range planning documentation. This should include such items as: summary schedules, plan of the week schedules, long-range maintenance schedules, modification schedules.

Review the procedures and mechanisms that line managers utilize to identify and prioritize mission-related tasks and processes, modifications, and work items. All direct funded work is controlled by procedures found in MCP-14, "Graded Approach to Defining Project Controls." Three key facility and activity level procedures mentioned in MCP-14 that are used to specify the detailed requirements of this graded approach are MCP-23, "Planning and Managing Projects with Grade I Cost and Schedule Controls," MCP-3543, "Planning and Managing Projects with Grade II Cost and Schedule Controls" and MCP-3544, "Planning and Managing Projects with Grade III Cost and Schedule Controls." Appendix B of MCP-14 defines Grade I, II and III projects. Indirect funded work is controlled by the process described in MCP-2668, "Financial Planning, Administration and Control of Indirect Activities/Work." Project Management for construction work also follows guidelines provided in GDE-51, "INEEL Guide for Project Management." Projects funded by the EM Program must meet additional but integrated project development and management requirements described in MCP-3416, "Environmental Management Program Baseline Development, Management and Reporting."

Review the procedures and/or mechanisms that are utilized by the facility or activity to ensure that identified work is accomplished in accordance with established standards and requirements. Standards and requirements are rolled down to the facility level for implementation utilizing the process described in MCP-2447, "Requirements Management." Review facility processes for ensuring standards and requirements promulgated by the MCP-2447 process are reflected in activities at the facility.

Review the performance monitoring documentation for the feedback and continuous improvement process. This should include such documents as occurrence reports, deficiency reports, results of post-job reviews, safety observer reports, Issue Communication and Resolution Environment (ICARE) reports and reports of self-assessments and independent assessments. Ensure occurrence reports and ICARE entries are being completed in accordance with the requirements specified in MCP-190, "Event Investigation and Occurrence Reporting" and MCP-2723, "Reporting and Resolving Employee Safety Concerns & Suggestions," respectively. Process deficiencies should be addressed by following the process described in MCP-598, "Process Deficiency Resolution." Lessons learned are managed and processed in accordance with the requirements described in MCP-192, "Lessons Learned Program." Management self-assessments are conducted in accordance with MCP-8, "LMITCO Self-Assessment Process for Continuous Improvement." The process of independent assessment of facilities and activities is described in MCP-552, "Conduct of Independent Oversight Assessments." The FY-99 schedule of independent

oversight assessment activities can be found on the QA and Conduct of Operations internal homepage at URL: http://home.inel.gov/qa&coo/ipa.html. The Facility Excellence Program, described in PDD-1011, is a structured means of regularly assessing facilities for compliance in any of these areas.

Review procedures for work control to determine that adequate feedback and improvement mechanisms are in place at the individual maintenance or activity level. MCP-3003, "Performing Pre-Job Briefings and Post-Job Reviews," is the activity-level requirements document for this process.

Review actual data from these processes to evaluate the effectiveness of the implementation of these mechanisms.

Interviews: Interview management personnel responsible for the identification and prioritization of work. This should include personnel such as those responsible for long-range planning documentation, schedule preparation, etc. Interview personnel responsible for administering the feedback and continuous improvement process. This should include personnel such as those responsible for occurrence reporting, lessons learned preparation, ICARE entries, self-assessment, and oversight. Interview personnel responsible for capturing and utilizing feedback and improvement information during individual maintenance or other work activities. Interview the facility ICARE representative. Interview line management to determine level of knowledge and involvement in the ICARE process.

Observations: Observe work definition and planning activities to ensure that requirements specified by the Requirements Management process (MCP-2447) are considered and implemented at the activity level. If possible, observe an Operational Safety Board (OSB) meeting and a Facility Operation Review and Implementation Board (FORIB) meeting. If possible, observe a program or project Change Control Board meeting. Observe a Post-Job Review. Observe any critiques that may arise throughout the course of the observation process.

Record Review

- STD-101, Integrated Work Control Process, Rev.1, 8/26/99
- PDD-1011, Facility Excellence Program
- GDE-51, INEEL Guide for Project Management
- MCP-8, Self-Assessment Process for Continuous Improvement, 8/31/99
- MCP-14, Graded Approach to Defining Project Controls
- MCP-23, Planning and Managing Projects with Grade I Cost and Schedule Controls
- MCP-190, Event Investigation and Occurrence Reporting, 8/24/99
- MCP-192, Lessons Learned
- MCP-552, Conduct of Independent Oversight Assessments, 5/1/99
- MCP-598, Process Deficiency Resolution, 4/1/99
- MCP-1752, RWMC Facilities Responsibilities, 9/9/99

- MCP-1753, RWMC 3,100-m^3 Project Roles and Responsibilities, 5/26/98
- MCP-1761, RWMC ESH&QA Department Roles and Responsibilities, 9/9/99
- MCP-1764, RWMC Operating Requirements
- MCP-1762, TSA Operating Requirements, 8/23/99
- MCP-1773, RWMC Reporting/Surveillance Requirements, 7/6/98
- MCP-1775, RWMC Self-Assessment Program, 2/1/99
- MCP-1791, Deputy Area Director Responsibilities, effective 9/9/99
- MCP-1817, Draft RWMC Work Window Scheduling Process
- MCP-1823, RWMC Tracking and Trending Committee, 6/16/99
- MCP-2447, Requirements Management
- MCP-2668, Financial Planning, Administration and Control of Indirect Activities/Work
- MCP-2723, Reporting and Resolving Employee Safety Concerns & Suggestions, 8/24/98
- MCP-3003, Performing Pre-Job Briefings and Post-Job Reviews, 8/9/99
- MCP-3416, Environmental Management Program Baseline Development, Management and Reporting
- MCP-3449, Health and Safety Inspections, 3/31/98
- MCP-3506, EM Prioritization Process, 3/15/99
- MCP-3543, Planning and Managing Projects with Grade II Cost and Schedule Controls
- MCP-3544, Planning and Managing Projects with Grade III Cost and Schedule Controls
- MCP-3562, Hazards Identification, Analysis & Control of Operational Activities, 7/31/99
- IAG-46, Authorization Agreement for the RWMC, 4/8/99
- CTR-7, Charter for the RWMC CARB, 7/8/99
- CTR-29, Charter for the RWMC Employee Safety Team, 4/29/99
- CTR-32, Charter for the RWMC Facility Operations Safety Board, 7/8/99
- LMITCO Waste Generator Services Implementation Plan, 4/98
- LMITCO Environmental, Safety, Health and Quality Assurance Performance Measures and Trending Report in Support of Operational Excellence, 9/99
- Acting RWMC SAD Individual Training Plan
- Hazardous Consent Order (OPE-EP-97-016), 1/14/96
- Settlement Agreement for U.S. vs. Batt, no. CV-91-0054-S-EJL
- FFC Act Consent Order
- CAO Audit Report A-99-08
- Corrective Action Reports for CAO Surveillance S-99-10 of INEEL TRIPS Project (CARS 99-044, 99-45, 99-046)
- RWMC Facilities Hazard List
- TPR-1743, SWEPP Operational Checkouts, effective 8/23/99
- Surveillance Reports RWC-1999-1, 2, and 3
- Office of Independent Assessment Report A-99-01
- Final Assessment for WIPP Radioactive Waste Transport Trailer, 99-Pt-009

- RWMC Self-Assessment Schedule, 4th Quarter
- Selected Process Deficiency Reports (PDRs)for RWMC
- Selected Employee Safety Concern Reports (SCRs) for RWMC
- LMITCO Waste Operations Monthly Project Performance and Issues, 8/99
- Memorandum of Agreement Between Waste Generator Services and WROC, 3/11/99
- Employee Position Description for WERF Senior Engineering Specialist
- Employee Safety Team Self Assessment Report for WROC, 6/29/99
- Employee Position Description for WERF Project Management Technical Leader
- Selected Process Deficiency Reports (PDRs) for WERF
- Selected Safety Concern Reports (SCRs) for WERF
- Selected Employee Suggestion or Concern (ESC) Forms
- WROC Daily Operations Schedule, 9/13/99 through 9/19/99
- WERF Incineration Schedule, 9/8/99
- WROC STP Milestones Schedule, 9/8/99
- WERF Incinerator Compressor Replacement Activities Schedule, 9/8/99
- WERF Hazards Profile Screening Checklists
- WERF Administrative Preventive Maintenance (APM) Performance Report, 8/12/99
- WERF Self Assessment Report, APM-2434
- WROC Administrative Preventive Maintenance Schedule, 7/99
- WERF Safety and Health Self Assessment
- WROC Facility Excellence Program Walkdown Facility Rating Reports, 7/20/99 and 2/3/99
- Action Summary – Business Management Controls for the Waste Operations Directorate, 8/5/99
- LMITCO Analysis of the Environmental Corporate Assessments: Summary and Lessons Learned, 11/98
- WERF Surveillance Reports, RWC-1999-6, 10, 13, 15, 26, 27, 30, 31, and 39.
- LMITCO Independent Assessment Plan (99-ENV-017), 4/13/99

Interviews Conducted

- LMITCO Acting Site Area Director for RWMC
- LMITCO Acting Maintenance Manager for RWMC
- LMITCO ESH&QA Department Manager for RWMC
- LMITCO Quality Supervisor for RWMC
- LMITCO Self-Assessment Coordinator for RWMC
- LMITCO Operations Supervisor for RWMC
- DOE-ID RWMC Facility Director
- DOE-ID Assistant Manager for Office of Program Execution
- LMITCO Planning Supervisor for RWMC
- LMITCO Planner for RWMC
- LMITCO Deputy Area Director for RWMC

- LMITCO Supervisor of Business Support for RWMC
- LMITCO Manager of the 3,100-m^3 Project at RWMC
- LMITCO Project Management Planner for RWMC
- LMITCO Acting Vice President for ESH&QA
- LMITCO Operations Supervisor for WERF
- LMITCO ESH&QA Manager for WERF
- LMITCO Project Management Technical Lead for WERF
- LMITCO Maintenance Planner for WERF
- LMITCO Engineer and Maintenance Supervisor for WERF
- LMITCO Planning Supervisor and Maintenance Manager for WERF
- LMITCO Site Area Director for WROC
- LMITCO Mixed Waste/Hazardous Waste Operations Supervisor for WROC
- LMITCO Self Assessment Coordinator for WROC
- LMITCO Technical Lead for Mixed Waste/Hazardous Waste Operations at WROC

Observations

- RWMC Self-assessment of WMF-602, Operations Support Building
- RWMC Self-assessment of WMF-655, Parts Warehouse
- RWMC TSA/SWEPP walk through
- RWMC TRUPACT Loading Facility (WMF-618) walk through
- RWMC TSA-Retrieval Enclosure (WMF-636) walk through
- RWMC Type I Storage Module (WMF-635) walk through
- RWMC Corrective Action Work Group Meeting
- RWMC Plan of the Day Meeting
- RWMC Operational Safety Board Meeting
- RWMC Planning Walkdown for RTR work activity
- WERF Plan of the Day Meeting
- WERF Pre-Job Briefing
- WERF Operations Shift Change
- WERF Post-Job Briefing

Discussion of Results

Senior managers at both RWMC and WERF are involved in the prioritization of mission specific tasks, collection of information for feedback, development of opportunities for continuous improvement, resolution of issues, and development of corrective actions and recommendations. (RMG1-3)

Processes and mechanisms that require line management to identify and prioritize mission related tasks have been developed and are in place at RWMC and WERF which flow down from corporate programs and procedures, operate at all levels of facility operations, and include all work processes and workers. While some of the

mechanisms are only recently implemented, efforts to integrate the implementation are apparent and continued practice with implementation of these processes will only result in continued improvements. The integrated planning and scheduling of work at WERF is already very effective and ensures that corporate expectations flow through senior facility managers and down to workers. (RMG1-4)

Procedures and mechanisms that require line management to identify and prioritize mission-related tasks and processes, modifications, and work items are in place and flow down from corporate programs and procedures, including MCP-14, MCP-23, MCP-3543, MCP-3544, MCP-2668, MCP-3416, and the guidelines provided in GDE-51. Line management at RWMC and WERF identify and prioritize mission-related tasks and processes, modifications, and work items, and translate these into detailed and integrated project management plans and work scheduling processes, which personnel utilize. RWMC and WERF processes for prioritizing day-to-day work are coordinated through these work planning efforts and integrated with mission priorities, and executed through plan-of-the-day meetings and continual assessments of project progress.

At the RWMC, the focus on the 3,100 m^3 Project is clearly evident throughout work planning and prioritization processes, including a 3,000 action baseline and efforts to translate the baseline into an integrated schedule detailed enough to support daily, weekly, and medium- to long-term planning of critical path activities. While all project management controls are not yet incorporated, such as effective medium-term planning, most issues have been identified and efforts are underway to resolve them in coordination with DOE-ID. Day-to-day planning and scheduling is well integrated, however, RWMC generally has had difficulty performing detailed planning and scheduling beyond several days or weeks. (RMG1-1) It should be noted that the 3,100 m^3 Project includes numerous uncertainties and events outside the control of LMITCO, and will require concerted medium- to long-term management effort to complete by the required deadlines. Continued and aggressive use of the LMITCO ISMS processes, RWMC planning and prioritization processes, and coordination with DOE-ID will be necessary not only to achieve mission success in a timely manner, but to also ensure that other missions and needs are not neglected.

At WERF, the focus on providing waste management services for on-site customers, such as INTEC, and off-site customers throughout the DOE Complex for treatment of mixed waste under FFC Act Site Treatment Plans, is evident in mission-task planning and prioritization. Prioritization of activities and resource needs to serve its missions is clearly evident throughout all WERF planning processes and is integrated into an annual schedule. The annual schedule accounts for specific wastes, generators, and incineration campaigns, maintenance between campaigns, and longer-term maintenance outages. Such planning at WERF is effective and easily translated both into work planning and prioritization of future needs. WERF provides critical DOE complex-wide capacity to meet Site Treatment Plan requirements. Future changes by U.S. EPA to the Resource Conservation and Recovery Act requirements for operation of incinerators will affect the WERF. EPA's pending Maximum Achievable Control

Technology (MACT) rule will result in the need for approximately $6 million of upgrades to WERF operation and emissions control equipment. These upgrades and the impact thereof are evidenced in WERF planning and prioritization efforts, including future budget requests.

At RWMC the integrated project management processes that are in place are effective in providing both management and workers a clear understanding of what activities can and cannot be accomplished, the operational limits of the facility, and what changes are necessary to accommodate additional or different scope of activities. For example, upgrades have been identified by LMITCO that will be needed to increase facility throughput and correct single-point failure potentials in the physical and personnel systems to accommodate the 3,100 m^3 Project. The management systems at RWMC, such as the Operational Safety Board, also provide effective controls to ensure that proposed activities, processes, and procedures are consistent with the facility's authorization basis and integrated planning assumptions. The RWMC Operational Safety Board is composed of senior level managers, supervisors, and owners of work processes, and was observed to be very effective in ensuring that proposed activities are consistent with the facility's authorization basis. (RMG1-5)

At WERF the integrated management processes that are in place are also effective in providing management and workers a clear understanding of what activities can and cannot be accomplished, the operational limits of the facility, and what changes are necessary to accommodate additional or different scope. The Operational Safety Board and other management tools are effective in ensuring that activities, process, and procedures are consistent with the facility's authorization basis and planning assumptions. For example some maintenance items identified in past years as priorities were ultimately not funded. Because of the integrated facility planning, WERF personnel and managers have been able to easily identify and articulate the impacts of this work not having been completed and the activities that are controlled by those limitations. As noted above, the U.S. EPA is contemplating issuance of rules that will impact the operational limits of the WERF incinerator. WERF personnel and managers were equally aware of the impacts of these requirements.

Procedures and mechanisms are in place at both RWMC and WERF to collect feedback information, including self-assessments, independent assessments, post-job briefings, monitoring against performance objectives, occurrence reporting and routine observation. The processes and mechanisms are utilized by personnel at all levels from the Site Area Director to craft workers, and personnel assigned these roles have qualifications, training, and experience commensurate with the level of information collection they are performing. While there are still some areas for improvement, the comprehensiveness and structure of the self-assessment programs at both RWMC and WERF are noteworthy. (RMG1-6) A concern articulated at both RWMC and WERF was that some issues identified during reviews and self-assessments get corrected and closed out on the spot and do not get recorded. Such findings are not, therefore, available for development of lessons learned, trending, or credit against corporate expectations concerning identification of issues.

At RWMC a self-assessment plan and schedule consistent with MCP-8 is used to schedule monthly assessments of all active (occupied) structures and quarterly assessments of all inactive (unoccupied) structures. Self-assessments are conducted every Tuesday and include supervisors, planners, subject matter experts, and worker-level personnel for each area being assessed. General and facility-specific checklists are used to ensure consistency of reviews. Employee safety teams are also actively involved in self-assessment activities and, under the Voluntary Protection Program, initiate, schedule, and conduct assessments. (RMG1-7) Review of specific projects and activities, such as through post-job briefings, are also used to identify potential feedback information. Specific personnel are charged with scheduling and coordinating reviews and processing results of reviews.

At WERF a schedule for conducting self-assessments consistent with MCP-8 is also used. Assessments, reviews, meetings, and other routine and administrative activities are scheduled on a comprehensive and integrated Administrative Preventive Maintenance schedule. Review and assessment activities include workers, subject matter experts, and supervisors and managers at all levels. Employee safety teams also initiate, schedule, and conduct self-assessments and other reviews. Specific personnel are charged with scheduling and coordinating reviews and processing results of reviews.

Procedures are in place at both RWMC and WERF that develop feedback and improvement information opportunities at the site and facility levels. Issues, nonconformances, and deficiencies are included in the ICARE system where site-wide tracking, closure, and lessons learned development occurs. As lessons learned reports are developed and issued by the site-wide program, they are distributed to supervisors and managers for information. At RWMC and WERF, processes and mechanisms are in place to develop feedback and improvement information opportunities facility-wide as well as for specific activities.

While the information that is developed at the individual maintenance or activity level at RWMC and WERF is generally utilized to provide feedback and improvement during future similar or related activities, there are improvements that could enhance feedback and improvement processes at the facility and activity level. For example, STD-101 requires planners to review the lessons-learned database for applicable topics and to incorporate relevant information into planning. However, there are currently no lower level checklists, guidance, or mechanisms to ensure that such review and incorporation occurs. As such, there is no assurance that lessons learned are fed back into the planning or update of work control packages. Additionally, sources other than the corporate lessons learned database may provide additional opportunities for improvement such as the Post-Job Briefing database. The Post-Job Briefing database is often used in development of lessons learned but such use lacks formality. As noted above, because some minor/housekeeping findings are not recorded, feedback is generally not developed for such identified issues. Direct access from Passport to the lessons learned database and other databases, checklists

for planners, or additional guidance on how to conduct effective searches would increase the confidence that lessons learned are incorporated into new work planning.

Procedures and mechanisms are in place and utilized by managers to identify improvement opportunities at RWMC and WERF, including reviews of self-assessments, independent oversight assessments, external audits, and Post-Job Briefings. Both RWMC and WERF use corporate metrics and mechanisms to understand facility level performance. When lessons learned reports are issued site-wide, all supervisors receive copies for information and dissemination to their staff as appropriate. However, evaluation and analysis mechanisms for translating operational information at the facility level into improvement processes and appropriate lessons learned are an area of improvement for both RWMC and WERF. More effective mechanisms and greater focus on trending of facility level feedback and improvement data is needed. Development and application of facility level performance metrics is still underway and is an area for improvement. (RMG1-2) As noted above, because some minor/housekeeping findings are not recorded, trending is generally not developed for such identified issues.

Notably effective procedures and mechanisms are in place at both RWMC and WERF to resolve issues and recommendations for improvement and identify corrective actions. (RMG1-8) Managers, personnel, and Employee Safety Teams utilize these processes and mechanisms. At RWMC a Corrective Action Working Group (CAWG) has been created in addition to the CARB. This group serves as a staff and supervisor level working group under the direction of the RWMC Facility Manager to address all issues, deficiencies, and findings from self-assessments, independent assessments, and other sources. All findings that require corrective actions are identified, tracked, validated, and closed through the CAWG as a management activity. Items that have been identified as simple maintenance are screened and acted upon with no further discussion. The CAWG serves as an effective means of managing issues and also reduces workload for the CARB and SAD, to whom it reports.

At WERF the corrective action program has also been recognized for its effectiveness. A recent analysis of business management controls for the waste operations directorate concluded that a number of improvements at WERF are directly attributable to their self-assessment program, including: increased Lockout/Tagout awareness, increased safety and housekeeping awareness, attainment of compliance for several confined spaces, and greatly improved detail in administering work control documentation.

Procedures and mechanisms are also in place at both RWMC and WERF that address oversight and ensure that regulatory compliance is maintained. At both facilities, requirements from RCRA permits, NESHAPs, and other regulations have been integrated into safety basis documentation, SARs, and TSRs, and associated procedures and mechanisms. Planning for maintenance and operations addresses these requirements. As such, assurance of regulatory compliance is also maintained

through any assessment or self-assessment that looks at facility and activity-specific controls, activities, and performance measures. Regulatory constraints and limits are integrated into the planning assumptions and pertinent controls are translated into operational limits. External assessments of both facilities are conducted by regulatory agencies, findings are resolved, issues tracked, and corrective actions implemented. Feedback from external regulatory assessments is incorporated into future internal assessments.

Conclusion: The objective has been met. While some areas for improvement exist, procedures and mechanisms at both RWMC and WERF are generally effective in prioritizing mission specific tasks, collecting information for feedback, developing opportunities for continuous improvement, resolving issues, and developing corrective actions and recommendations. Staffs at all levels from senior managers to craft personnel are actively involved in the implementation of these processes.

Issue(s)

- RWMC has generally had difficulty performing detailed planning and scheduling beyond several days or weeks. (RMG1-1)

- More effective mechanisms and greater focus on trending of facility level feedback and improvement data is needed at both RWMC and WERF. (RMG1-2)

Strength(s)

- Senior management at RWMC and WERF are clearly involved and engaged in the ISMS process and execution of missions. (RMG1-3)

- WERF has very effective integrated planning and scheduling of work that ensures corporate expectations flow through senior facility managers and down to workers. (RMG1-4)

- The RWMC Operational Safety Board was observed to be an effective method of assuring that proposed activities are consistent with the facility's authorization basis. (RMG1-5)

- The comprehensiveness and structure of the self-assessment programs at both RWMC and WERF are noteworthy. (RMG1-6)

- Employee safety teams are actively involved in self-assessment activities and, under the Voluntary Protection Program, initiate, schedule, and conduct assessments. (RMG1-7)

- Corrective Actions programs including the RWMC Corrective Actions Working Group and WERF CARB are very effective. (RMG1-8)

Inspector_____ Martin J. Letourneau	**Team Leader**_____ Joseph Arango

Sub-Team: RWMC/WERF	FUNCTIONAL AREA: MG.2 DATE September 21, 1999

OBJECTIVE: MG.2 Clear and unambiguous roles and responsibilities are defined and maintained at all levels within the facility or activity. Managers at all levels demonstrate a commitment to ISMS through policies, procedures, and their participation in the process. Facility or activity line managers are responsible and accountable for safety. Facility or activity personnel are competent commensurate with their responsibility for safety. (CE II-6)

Criteria

6. Procedures and/or mechanisms are in place and utilized by personnel that define the roles and responsibilities for the identification and prioritization of mission-related tasks and processes, facility or process modification, and other related work items.

7. Procedures and/or mechanisms are in place that defines clear roles and responsibilities within the facility or activity to ensure that safety is maintained at all levels.

8. Facility or activity procedures specify that line management is responsible for safety.

9. Procedures and/or mechanisms are in place and utilized to ensure that personnel who supervise work have competence commensurate with their responsibilities.

10. Procedures and/or mechanisms are in place and utilized to ensure that personnel performing work are competent to safely perform their work assignments.

Approach

Record Review: Review organizational documentation such as MCP-1752 “RWMC Facilities Responsibilities,” PDD-1015 “AEDL Research Laboratory Operations,” “Idaho Falls Facilities Tenants’ Manual,” MCP-3640 “Central Facilities Area Operations Information Roles And Responsibilities” and other similar documents for TRA and WERF to determine the personnel positions with responsibility associated with this objective. Ensure roles and responsibilities for personnel responsible for safety are clearly defined and understood and properly executed. Review should include position descriptions, Form-325.01 “Employee Position Description” and other applicable MCPs that describe roles and responsibilities related to ensuring safety are maintained. The review should consider personnel in line management and staff positions and should evaluate whether line managers are responsible for safety.

Review the procedures established such as PDD-13 “Training and Qualification Program,” MCP-27 “Preparation and Administration of Individual Training Plans,” and MCP-33 “Training Qualification and Certification” to ensure that managers and workers are competent to safely perform work. Review the personnel records which should include the “Training and Implementation Matrix” (TIM), “Individual Training Plans” and “Employee Training History,” to identify the individual qualifications that meet the elements of the position descriptions. Review the applicable records of qualification and certification. Review any training or qualification material, including training and qualification manuals such as Manual 12 and the associated “yellow sheets” that support gaining or verifying competence to fill the positions.

Interviews: Interview selected personnel at all levels of facility or activity management who are identified by the record review above. Verify their understanding and commitment to ensuring that safety is maintained for all work at the facility or activity. Interview a selected number of supervisors and workers to determine their understanding of competency requirements and their commitment to performing work safely.

Observations: Observe training being delivered for key program such as hazards identification and analysis. Observe scheduled activities that demonstrate that clear roles and responsibilities are established and understood, that line managers are actively involved with decisions affecting safety, and that managers and workers are competent to perform their duties. Activities such as weekly planning meetings, plans of the day, event critiques, safety training, OSB meetings, Pre-job briefs, Site Operations Council (SOC) meetings, Corrective Action Review Boards (CARBS) and safety meetings are typical events that may provide good examples of the safety training and decision making process. Activities such as facility/process operations, testing, and maintenance will provide opportunities to observe personnel in the execution of roles and responsibilities, their understanding of procedures, awareness of hazards and management commitment to safety.

Record Review

- MCP-1752, RWMC Facilities Responsibilities
- PDD-13, Training and Qualification
- MCP-27, Preparation and Administration of Individual Training Plans
- MCP-33, Training Qualification and Certification
- PDD-1004, Program Description Document for INEEL Integrated Safety Management System
- PDD-1005, Site Operations
- WMF-610, 618 Self Assessment Checklist, RWMC-105-M#
- RWMC Facility Hazards Awareness Training
- MCP-1764, RWMC Operating Requirements
- MCP-1762, TSA Operating Requirements
- MCP-1761, ESH&QA Department Roles and Responsibilities

- MCP-1775, RWMC Self-Assessment Program
- MCP-1791, Deputy Area Director Responsibilities
- CTR-7, INEEL Charter for RWMC Corrective Action Review Board (CARB)
- CTR-32, INEEL Charter for RWMC Facility Operations Safety Board (OSB)
- CTR-29, INEEL Charter for RWMC Employee Safety Team
- STD 101, Integrated Work Control Process Positions and Primary Owner Assignments for RWMC Structures, Systems and/or Components (SSC)-JMW-14-99, July 26, 1999
- Oversight Report, RWC-1999-12, General Surveillance, April 1999
- Oversight Report, RWC-1999-15, Emergency Preparedness Drill, April 1999
- Oversight Report, RWC-1999-4, Missed Quarterly RCRA Inspection, 2/8/99
- Occurrence Report for #ID-LITC-WERF-1999-001, WERF
- Occurrence Report for #ID-LITC-WERF-1999-002, Violation of Lockout Tagout Procedures
- PDD-WROC-01, Program Description Document for Waste Reduction Operations Complex Training
- Waste Experimental Reduction Facility (WERF) Training Program Status and Action Plan-MOC-10-99, 9/13/99
- Form 325.01, Employee Position Description, WROC/PBF Site Area Director
- Employee Training Plan, WROC/PBF Site Area Director
- Individual Training History, WROC/PBF, Site Area Director
- Form 325.01, Employee Position Description, WERF, ESH&QA Manager
- Individual Training Plan, WERF ESH&QA Manager
- Employee Training History, ESH&QA Manager

Interviews Conducted

- WROC Site Area Director
- WERF Operations Supervisor
- WERF Mixed Waste/Hazardous Waste Operations Supervisor
- WERF Training Supervisor
- WERF Training Instructors (3)
- WERF Shift Supervisor
- WERF Maintenance Worker
- WERF/WROC Shift Supervisor
- WERF ESH&QA Manager
- WERF Operators (2)
- RWMC Site Area Director
- RWMC ESH&QA Manager
- RWMC Maintenance Supervisor
- RWMC Nuclear Facility Manager
- RWMC Operations Supervisor
- RWMC Training Supervisor
- RWMC Training Instructors (2)

- RWMC PASSPORT Administrator
- RWMC Mechanical Shop Foreman
- RWMC Shift Supervisor
- RWMC ER Safety Engineer
- RWMC ER ESH&QA Program Manager
- RWMC Safety Engineer
- RWMC Industrial Hygienist
- RWMC Fire Protection Engineer
- LMITCO Director of Training

Observations

- LMITCO INEEL and DOE-ID ISMS Status Presentations (series)
- INEEL ES&H and Quality (ESH&QA) Training, with written examination
- INEEL General Employee and INEEL Access Training, with written examination
- WERF Plan of the Day
- RWMC Plan of the Day
- Walkdown of the RWMC Facilities with Maintenance Supervisor
- Walkdown of the WERF Facilities with Facility Manager
- WERF Pre-job Briefing
- RWMC Lockout/Tagout Training
- RWMC Operations Safety Board Meeting

Discussion of Results

Procedures and mechanisms are in place and utilized by RWMC/WERF that define the roles and responsibilities for the identification and prioritization of mission-related tasks and processes, facility or process modifications, and other related work items. At a company level, roles and responsibilities for key positions and management boards are defined in PDD-1004, INEEL Integrated Safety Management System and PDD-1005, Site Operations. RWMC and WERF have procedures and processes in place that provides information concerning the roles and responsibilities of the positions assigned to various personnel at each facility. Work support groups have been established to provide technical and operations resources necessary to complete work at the RWMC and WERF. The work support groups provide a service to the projects by supplying trained and qualified staff to perform the work and ensure programmatic requirements are implemented and completed in conformance with other requirements delineated by DOE Orders and company policy and procedures.

Prioritization of mission-related task and processes are accomplished through the use of a work window process that provides a structured work control process to

integrate and accomplish activities to meet RWMC facility missions, milestones, and goals in accordance with the ISMS. RWMC has procedures in place that covers the activities necessary to integrate, prioritize and execute activities identified by the RWMC Facility Manager and facility/project managers. The prioritization of mission-related tasks and processes are accomplished at WERF through the facility burn plan.

Procedures and mechanisms are in place that show clear roles and responsibilities within RWMC and WERF to ensure that safety is maintained at all levels. Employee Position Descriptions (EPDs), Individual Training Plans, and Employee Training Histories for several senior managers, supervisors, operators, and crafts were sampled and reviewed. EPDs identified roles and responsibilities for ensuring that safety is maintained. A statement in the position description requires that the individual must be familiar with and comply with all relevant safety and health requirements.

At the RWMC and WERF, roles and responsibilities are defined in several management control procedures depending on their areas of responsibility. Position descriptions for senior managers and supervisors included a statement about responsibility for ensuring that the principles of ISMS are applied to all work planning, control and execution. Roles and responsibilities for personnel responsible for safety are clearly defined, understood and properly executed.

The Waste Generator Services (WGS) organization was created in 1998 to respond to recurring waste management problems, particularly with characterization and disposition of certain waste streams at the INEEL. The creation of WGS was an attempt to streamline the waste acceptance process and provide waste generators with comprehensive waste management services through a single organization, answering to Waste Operations, to manage and disposition wastes in a timely, cost-effective, and compliant manner. As such, WGS provides technical assistance to generators, including helping process data for generators, enter data in the INEEL Integrated Waste Tracking System (IWTS), characterize waste, fill out land disposal restriction (LDR) forms, conduct inspections, ensure proper storage, and in the case of off-site generators, help certify the waste for treatment at WERF.

Interviews with WERF managers indicate that there is some confusion between WERF and WGS concerning specific roles and responsibilities. This is evident by the Memorandum of Agreement (MOA) that the WROC SAD determined was necessary to cover the gaps in the WGS program. The MOA was signed March 1999 between WGS and WROC for the remainder of FY 99 to address some of these issues. Some issues remain to be resolved, such as accountability for work performed by WGS that may be found deficient in the context of WERF operations. Interviews determined that roles and responsibilities identified in the MOA between WERF and Waste Generator Services organization have not been consistently implemented. (RMG2-1)

Facility and activity procedures clearly specify that line management is responsible for safety at the RWMC and WERF. For example, the RWMC Site Area Director (SAD) is the Champion of the Voluntary Protection and Total Safety Culture Programs and responsible for establishing an organization responsible for safety.

RWMC and WERF procedures and mechanisms are in place and utilized to ensure that personnel who supervise work have competence commensurate with their responsibilities. The INEEL's Competence Commensurate with Responsibility process reflects unified efforts among Human Resources, Training, Document Control, Quality Assurance, specific review boards and line management to ensure work is performed safely. In general, all employees go though three steps for training and qualification: (1) Core or Site-wide training, (2) Position or Task Qualification and Training, and (3) Facility-Specific Qualification and Training. It was noted that the Primary Owner positions at RWMC, the Systems Engineers at WERF, and most Technical Support Personnel in general do not have specific qualifications standards formalized to delineate the requirements to occupy the positions they hold. (RMG2-2) The contractor has identified this issue and plans are being made to strengthen this part of the qualification program.

RWMC and WERF have procedures and mechanisms in place and utilized to ensure that personnel performing work are competent to safely perform their work assignments. PDD-13, Training and Qualification, describes the LMITCO program for ensuring that workers have the ability to perform their job function safely, competently, and effectively. This program is designed to meet the requirements of DOE 5480.20A, "Personnel Selection, Qualification and Training Requirements for DOE Nuclear Facilities." A Training Implementation Matrix (TIM) and Training Program Manual have been developed for the RWMC. A systematic approach to training (SAT) is employed that incorporates five key elements: analysis, design, development, implementation, and evaluation. Job analysis is used to identify work tasks for various job classifications.

In general, the WERF Training Program complies with the intent and purpose of PDD-13. The document that implements PDD-13 at WERF is the Program Description Document for WROC Training, PDD-WROC-01. It should be noted that WERF is a less than hazard category III, radiological facility and does not require compliance with DOE Order 5480.20A. Because of this, WERF is not required to develop and maintain a Training Implementation Matrix (TIM). The Program Description Document (PDD-WORC-01) describes how the Waste Reduction Operations Complex (WROC of which WERF is a part) addresses training requirements as defined by federal and state regulations and company procedures. This PDD also describes the program for the selection, qualification and/or certification, and training requirements for personnel involved in the operation, maintenance, and technical support (except as noted in RMG2-2) of the various WERF facilities.

Additionally, to maximize resources and to ensure appropriate rigor is applied to training programs, WERF applies a "graded approach" to development of training as discussed in PDD-13. In adopting such approaches, it should be noted that personnel safety is not compromised, and every effort is made to ensure personnel competence is commensurate with the responsibilities they are assigned. It is also noted by this review that WERF has an Idaho State approved apprenticeship program for the training of the WERF operators. (RMG2-3)

Conclusion: The objective has been met.

Issue(s)

- Roles and responsibilities identified in the MOA between WERF and Waste Generator Services organization have not been consistently implemented. (RMG2-1)

- Primary Owner positions at RWMC, the Systems Engineers at WERF, and the Technical Support Personnel in general do not have specific qualifications standards formalized to delineate the requirements to occupy the positions they hold. (RMG2-2)

Strength(s)

- Sufficient rigor exists in the WERF apprenticeship program, for the training of operators, which has resulted in approval by the State of Idaho. (RMG2-3)

Inspector_____ Glenn M. Morton, P.E.	**Team Leader**_____ Joseph Arango

Sub-Team: RWMC/WERF	**FUNCTIONAL AREA: OP** **DATE**: September 21, 1999

OBJECTIVE: OP.1 An integrated process has been established and is utilized to effectively plan, authorize and execute the identified work for the facility or activity. (CE II-4)

Criteria

11. Procedures and/or mechanisms are in place and utilized to ensure that work planning is integrated at the individual maintenance or activity level, and work planning fully analyzes hazards and develops appropriate controls.

12. Procedures and/or mechanisms are in place and utilized which ensure that there is a process used to confirm that the facility or activity and the operational work force are in an adequate state of readiness prior to authorizing the performance of the work.

13. Procedures and/or mechanisms are in place and utilized which ensure that there is a process used to gain authorization to conduct operations.

14. Procedures and/or mechanisms are in place and utilized which ensure that safety requirements are integrated into work performance.

15. Procedures and/or mechanisms are in place and utilized which ensure that adequate performance measures and indicators, including safety performance measures are established for the work.

6. Workers actively participate in the work planning process.

Approach

Record Review: Review documents and/or mechanisms that govern the work control process for planning, authorizing, and conducting work such as STD-101 "Integrated Work Control Process," MCP-3562 "Hazard Identification, Analysis and Control for Operational Activities," MCP-3571 "Independent Hazard Review," PRD-5043 "Operational Safety Boards" and MCP-3480 "Environmental Aspect Evaluation and Maintenance." Review should assess the adequacy of the documents to meet the requirements listed above and determine that the maintenance and work control process is effectively integrated into the facility/activity procedures. In particular, note the integration of hazard identification and controls, (i.e. chemical, electrical, radiological, waste streams, environmental) into the work planning process. Review the adequacy of the division of responsibilities as defined by the governing

procedure, worker involvement in all aspects of the activity, and work authorization process. Controls for individual work items or activities such as Job Hazards Analysis (JHA), Radiation Work Permits (RWP), Hazard Profile Screen Checklist (HPSC), Work Control Forms (WCF), Confined Space Entry Permit, and operating procedures should also be evaluated.

NOTE: Although the ALARA Committee process will be reviewed by the Radiological Controls SME, a review of work control documents should be made to ensure the basic concepts of ALARA as well as any ALARA Committee recommendations are incorporated into the work control documentation.

Review the integration of subcontractor work control into the facility work control process. Evaluate the review of subcontractor work control documentation, the approval of the documentation, the authorization to conduct work and the oversight of subcontractor work in the facility.

Review the performance measures and performance indicators using the "INEEL Performance Measures and Trending Report," MCP-3521 "Trending Center," self - assessments conducted in accordance with MCP-8 "LMITCO Self-Assessment Process for Continuous Improvement," or the Facility Excellence Program PDD-1011 "Facility Excellence Program." Determine if these tools provide information that is truly a direct indicator of how safely the work is being performed.

Review the process used to prepare Authorization Agreements, MCP-3567 "Authorization Agreements with Authorization Basis List" and TEM-2 "Template for Authorization Agreements with Authorization Basis List." Review the Authorization Agreements for the Advanced Test Reactor (ATR) and the Radioactive Waste Management Complex (RWMC) to determine if they are adequate, that they demonstrate effective integration, and that proper procedures were followed to prepare, review, and approve them.

Interviews: Interview personnel responsible for preparing, authorizing, performing, and measuring the performance of the work. This should include personnel such as those responsible for preparing and maintaining work control documents, hazard identification and control documents, the Plan of the Day (POD), equipment status files, pre-job briefings, and the conduct of facility or activity operations. Interview personnel responsible for individual activity procedures and controls (e.g., JHAs, RWPs, HPSCs, WCFs, etc.) Verify adequate worker involvement at each step of the process. Interview personnel responsible for the development and implementation of the self-assessment program including individuals who participate in self-assessments. Interview those individuals responsible for development, maintenance, and approval of the Authorization Agreement. Interview members of the management team charged with adherence to the requirements listed within the Authorization Agreement.

Observations: Observe the actual authorization and performance of work activities. Observe a plan of the day or plan-of-the-week meeting. Attend an Operational Safety Board (OSB) meeting or an Independent Hazard Review Group (IHRG) meeting with field verification that hazard controls specified by the hazards control documents are being implemented. Team members should observe the development of a maintenance work package as well as the field execution of a maintenance work package. Observation should include the pre-job brief, authorization by the managers to proceed, command and control of the work, review of safety requirements, etc. Observe work hazard identification activities (e.g., JHAs, RWPs, etc.) and the application of MCP-3562 during an operational procedure walk-down and review. Observe worker involvement in these processes.

Record Review

- Program Description Document PDD-1004, INEEL Integrated Safety Management
- STD-101, Standard for Integrated Work Control Process
- PLN-485, Project Plan for the Configuration Management Project
- MCP-3562, Hazard Identification, Analysis & Control of Operational Activities
- MCP-3003, Performing Pre-Job Briefings and Post-Job Reviews
- MCP-3571, Independent Hazard Review
- MCP-3480, Environmental Instructions for Facilities, Processes, Materials and Equipment
- MCP-3567, Authorization Agreement with Authorization Basis List
- MCP-2985, Chapter XVI – Operations Procedures
- LMITCO Environmental, Safety, Health and Quality Assurance Performance Measures and Trending Report in Support of Operational Excellence, INEEL/EXT-99-00516(Sep) 6th Issue 1999
- RWMC Work Order 14834, LLI 8 W RWMC Foot Plates (completed)
- RWMC Work Order 15870, Sample Unknown Drum (completed)
- RWMC Work Order 13497, Trouble Shoot and Repair Crane WMF-618
- RWMC Work Order 16321, TRM 9 M Crane Inspection
- RWMC Work Order 13606, Trouble Shoot and Repair HV-FHP-1305
- RWMC Work Order 14739, Repair Drum Rotator on the RTR Cart
- RWMC Work Order 10988, Remove Feed Cables from N-PP-1001
- TPR-1697, RWMC Waste Handling; Approved RCRA Storage
- RWMC Job Safety Analysis 054, TPR-1697, Waste Handling Approved RCRA Storage
- TPR-1742, RWMC Loading and Unloading Non-TRUPACT Transuranic-Contaminated Waste for Characterization at ANL-W
- TPR-1579, RWMC SWEPP Electrical System
- TPR-1728, RWMC Manual Drum Gas Sampling
- RWMC Non-Conformance Report RWMC-041, DVS Drum Filters
- RWMC Engineering Design File RWMC-543, Performance Evaluation of Carbon Composite Filters

- WERF Work Order 15270, Trouble Shoot and Repair CO Monitor
- WERF Work Order 15136, Repair Air Leak on Waste Feed System
- WERF Work Order 16224, Calibration of 10G PT-1 & 2, 10G-D-23 and Annunciators
- TPR-WERF-3.2.9.1, WERF Sizing Operations
- TPR-WERF-3.2.4.10, Clean Incinerator Heat Exchanger 10G-HX-1
- TPR-WERF-3.1.2.4, Incinerator Operation
- WERF Activity Based Document Review Schedule of 9/14/99

Interviews Conducted

- RWMC Facility Manager
- RWMC Deputy Site Area Director
- RWMC Maintenance Manager
- RWMC Planning Supervisor
- RWMC Mechanical Foreman
- RWMC Electrical Foreman
- RWMC Planners (2)
- RWMC Preventive Maintenance Coordinator
- RWMC Facility Mechanic
- RWMC Laborer
- RWMC Operations Technical Supervisors (3)
- RWMC Engineer
- WERF Engineering and Maintenance Supervisor
- WERF Operations Supervisor
- WERF Planning Supervisor
- WERF Maintenance Planners (2)
- WERF Maintenance Foreman
- WERF Acting Electrical Foreman
- WERF Painter

Observations

- RWMC Loading of 55 Gallon Mixed Waste Transuranic Drums into TX-4 Shipping Containers in WMF-635
- RWMC Software Modifications to Headspace Sampling System in WMF-635
- RWMC Planning Walkdown for Real Time Radiography (RTR) Modification to RTR Cart Limit Switch
- RWMC Pre-Job Briefing for Change Out of Self-Tapping Filters for Mixed Waste Transuranic Drums Destined for the Waste Isolation Pilot Plant
- RWMC Pre-Job Briefing for SWEPP Operational Checkouts
- RWMC Monthly Preventive Maintenance of Overhead Crane in TRUPACT Loading Facility

- RWMC Loadout of Transportation Trailer with Mixed Waste Transuranic Drums following SWEPP Processing
- RWMC Plan of the Day Meeting
- WERF Pre-Job Briefing for Work Order GF-2W-1
- WERF Pre-Job Walkdown
- WERF Preventive Maintenance, Lubrication of Blowers and Dampers
- WERF Control Room Incineration Operations, TPR 3.1.2.4 Revision 57
- WERF Abnormal Operating Procedure 3.3.6.11 Revision 5
- WERF Shift Turnover
- WERF Work Order 4154 Installation of Executone Intercom System, cable pulling activity
- WERF Maintenance Related Activity, Weed Trimming
- WERF Post Job Briefing
- WERF Job Planning Walkdown, Remove and Repair Heat Exchanger Silencer

Discussion of Results

Procedures and processes had been established at RWMC to ensure that work planning was integrated at maintenance and activity work levels. For maintenance activities, STD-101 defined the work planning process. Interviewed owners, planners, supervisors, and craft personnel were familiar with their roles under the Hazards Identification and Mitigation (HIM) process of STD-101. Although the HIM process appeared to be successful in identifying maintenance related hazards and establishing appropriate controls, some work orders were found to be lacking both in technical adequacy and integration of Environmental, Safety, Health, and Quality Assurance (ESH&QA) provisions. For all operational procedures at RWMC, the MCP-3562 processes for hazard analysis and mitigation had resulted in the development of Job Safety Analyses (JSA).

Integration of work planning into maintenance documents per STD-101 was significantly more advanced at WERF than at RWMC. Work order instructions were clearly outlined in the Section X instructions and ESH&QA controls were effectively integrated into the instruction steps. Two areas for improvement were noted in the integration of ESH&QA controls in work orders. First, work order instructions tended to rely on direction from the WERF Shift Supervisor or Facility Operator to determine the disposition of waste generated from work activities. Shift Supervisors and foremen interviewed indicated that Waste Generator Services was available to assist in waste characterization and disposition, but the responsibility for determination of waste disposal traditionally resided in the Shift Supervisor. The principles of ISM, however, require waste characterization and disposition to become part of the work planning process. The second area for improvement involved the decision by WERF facility management not to maintain as built detail system drawings showing plan, elevation and section views and material requirements. Although a select number of system diagrams were faithfully updated and maintained on site as Master

Facility and Key Drawings, the lack of detail drawings (1) would inhibit troubleshooting of systems which could not be easily accessed and (2) would allow a wide variety of material substitutions and/or reconfigurations without engineering review. As an example, Work Order 15136 step 4 allowed fitters to repair and/or replace leaking air lines as needed. Without detail drawings, the instructions permitted fitters to replace fittings, tubes, connectors and other equipment without an approved drawing material list and to reroute the tubing without prior engineering review. The Configuration Management (CM) Project Coordinator confirmed that, outside of Master Facility and Key Drawings, detail drawings would not be updated unless specifically referenced in a work order or procedure. Since WERF management has adopted a policy of maintaining only Master Facility and Key Drawings, the current company CM recovery project will not result in as-built detail drawings at WERF.

Most of the operational procedures at WERF had not yet been reviewed under the MCP-3562 process to identify hazards and develop controls. In particular, the primary operating procedure for WERF incineration, TPR-WERF-3.1.2.4, was observed to be in use by operators without an established Job Safety Analysis (JSA) even though the WERF Activity Based Document Review Schedule stated "Do not use without approved JSA". Even for those procedures having completed the MCP-3562 process, not all hazards identified were properly mitigated within the procedure. (ROP1-1) In particular, requirements for radiological surveys, heat stress controls, hoisting and rigging required maintenance, waste disposition and heavy metal contamination control were found to be missing from or inadequate in the text of reviewed procedures. Furthermore, technical instructions such as valve number identification, rigging diagrams, torque values and sequence were judged to be less than adequate.

The procedures and mechanisms used to confirm facility and operational readiness prior to authorization of work were similar for RWMC and WERF. Both facilities employed scheduling processes to prioritize, coordinate, and allocate resources to various maintenance and operational activities. Periodic scheduling meetings were combined with daily Plan of the Day (POD) meetings to obtain consensus between craft, operations, and support personnel on strategies to meet operational commitments and to satisfy maintenance requirements. The product of these meetings, the Plan of the Day, was in turn approved by the Facility Manager (at RWMC) or the Site Area Director (at WERF) as the governing document for work authorization. In cases where additional high priority work scope was identified after approval of the Plan of the Day, both RWMC and WERF demonstrated the ability to obtain Facility Manager/Site Area Director approval of the new work and update a controlled copy of the Plan of the Day maintained by the respective Shift Supervisors. The observed processes to prioritize, coordinate, allocate resources and authorize work were judged very effective. (ROP1-4)

The procedures and processes used to gain authorization to conduct operations were established and effective at both RWMC and WERF. Both facilities employed the POD to schedule and approve operational procedures via the Facility Manager (at RWMC) or Site Area Director (at WERF). Both organizations used timely orders to communicate management instructions and expectations to operators for the conduct of daily operations. Controlled copies of operational procedures were signed for authorization by the respective Shift Supervisors, and daily shift briefings were used effectively to inform operators of approved operations both verbally and in written turnovers.

The procedures and processes to ensure the integration of safety requirements into work performance were judged deficient at RWMC. In many cases, technical instructions necessary for maintenance activities at RWMC were either omitted altogether or listed outside of the work order in documents found on the left hand side of work order travelers. These "left hand side" work instructions generally lacked proper sequencing and integration of required hazard mitigation provisions, leaving craft personnel to mentally coordinate between multiple documents (e.g., Section X instructions, special work permit restrictions, left hand side supplemental instructions) during job execution. Of particular concern was the widespread use of Job Safety Analysis (JSA) RWMC-016 in work orders to authorize troubleshooting of energized electrical components at the discretion of the worker. The text of the JSA required management to demonstrate that de-energization would introduce additional or increased hazards or would be infeasible due to equipment design or operational limitations prior to troubleshooting of energized components. In practice, no such demonstrations were documented and craft personnel believed that approval of the work order constituted the management demonstration required for troubleshooting of energized equipment. Technical direction and integrated hazard mitigation provisions within RWMC work orders were inadequate. (ROP1-2)

Evidence of less than adequate work order execution was also discovered at RWMC during the verification. During observation of crane maintenance at the TRUPACT Loading Facility, the mechanics were initially unaware that Work Order 16321 required step-by-step execution and initialed step 2 for completion prior to marking step 1 N/A. When questioned, the mechanics stated their belief that all preventive maintenance work orders were "general intent" and did not require step-by-step performance. A supervisor was forced to remind the mechanic of the requirement to wear a hardhat during crane operations, and the mechanic had to leave the work area to obtain the required safety glasses for work performance. In addition, the requirement of the fall hazard analysis on the left-hand side of the traveler to post the work area and/or warn pedestrians of overhead work was not adequately performed by a mechanic. In a related work order completed on 7/15/99, mechanics replaced gear box seals using vendor instructions found on the left hand side of the traveler even though the text of Work Order 13497 and Work Order Change 1 authorized only "minor

repairs…within the skill of the craft." The lack of craft rigor and discipline in execution of written work order directions was judged a significant deficiency.

The most severe deficiency in the integration of safety requirements into work performance at RWMC was the failure of operators to execute operational procedures as written. During a 9/14/99 observation of mixed transuranic waste drum movements into TX-4 shipping containers in the Type 1 Storage Module, the technical leader was unable to identify the step in TPR-1697 being executed and admitted that the scope of the procedure did not address loadout of the shipping containers. The Facility Manager was present but failed to take corrective actions, and instead arranged for a briefing to justify the use of the TPR-1697 procedure by operators to load TX-4 shipping containers. During the briefing, the Maintenance Manager asserted that TPR-1697 was a "general intent" instruction and was not required to be executed step by step. On 9/15/99, the Facility Manager and Deputy Site Area Director reported that TPR-1697 was the incorrect procedure for TX-4 shipping container loadout and that TPR-1742 should have been used. On 9/15/99, other drum movements in WMF-610 were observed as drums having been examined by the Stored Waste Examination Pilot Plant (SWEPP) were being loaded on a trailer for return to the Type I Storage Module. No procedure was present at the work site. The operator was unable to identify the number of the procedure being worked and stated that identification of the drums to be moved had been provided by verbal instruction. Operators in the SWEPP office area stated that TPR-1697 was the governing procedure but could not locate the procedure in the building. Conduct of Operations procedure MCP-2985 required Use Type 1 procedures such as TPR-1697 to "accompany the user when the procedure is being performed" and further stated that procedures "Shall be followed in a step by step manner."

Further evidence of the lack of rigor and discipline in RWMC Conduct of Operations was identified during observation of pre-job briefings on 9/15/99 for drum filter replacements and drum movements at SWEPP. Pre-job briefing forms were not reviewed with operators in the manner required by MCP-3003. Instead, the technical leads initialed applicable line items of the pre-job forms after completion of the briefing. To replace waste drum self tapping filters having no quality assurance pedigree, operators were directed to use selected steps of a procedure written to perform manual gas sampling of waste drums, TPR-1728. The drums to be worked were not identified in writing. The technical leads did not know the details of the technical drivers requiring replacement of the filters and were essentially performing the job at the verbal direction of their supervisor. After some research, the Deputy Site Area Director (SAD) reported that the identification of the specific drums requiring filter replacement was contained in an electronic memorandum from a project engineer transmitted 8/25/99. The technical basis for the filter replacement was reported by the Deputy SAD to be Non-Conformance Report (NCR) RWMC-041 and Engineering Design File (EDF) RWMC 548. However, the recommendation of the EDF report to use only serialized filters with certified test results for TRUPACT shipments was not

incorporated into the corrective actions of the NCR. Neither the EDF nor the NCR was cited in the TPR-1728 procedure. The performance of specific filter replacements as a quality assurance corrective action was judged to be outside of the scope of the manual drum gas sampling procedure TPR-1728.

The lack of rigor and discipline in the execution of work order and operational procedure instructions undermined the ISM process at RWMC. (ROP1-3) Interviews with and briefings by facility management did not convey a resolve to perform work instructions as written.
The Deputy SAD recognized the difficulties in rigor and discipline for work execution and had initiated compensatory measures in specific areas. For example a special team of operators, dubbed the "A Team", had been subjected to specific and repeated training for TRUPACT container loadout for shipments of waste to WIPP.

Integration of safety requirements into work performance at WERF was significantly improved over the conditions noted at RWMC. Nevertheless, specific deficiencies in work order execution were noted during observations and reviews. During performance of the work order for preventive maintenance on WERF blowers and dampers, the mechanic failed to lubricate dampers as required. During the pre-job brief, the maintenance foreman verbally instructed the mechanic to evaluate dampers and lubricate "as necessary". The work order, however, included no option for the mechanic to forgo damper lubrication based on his judgment of need. In another preventive maintenance job, Work Order 16224, craft personnel failed to list damper positions in Table 2 as required by step 1.3.A and instead recorded "Sat". In addition, data blanks for sections 2 and 4 of the work order were left blank without explanation even though the work order included no specific provisions to leave the steps unperformed. Overall, however, craft personnel used the required Personnel Protective Equipment and observed safety precautions specified via work orders and the maintenance related work process of STD-101.

Work performance by WERF operators in the execution of operational procedures was rigorous and consistent in the application of Conduct of Operations principles. Operational procedures were present at the job sites and operators executed the instructions in a step by step manner as required. The WERF incinerator operator successfully used the provisions of an Abnormal Operating Procedure to address unexpected high average HCl emission levels detected during incineration. Although minor inadequacies in other Conduct of Operations protocols were noted, operators appeared to be committed to step by step performance of approved procedures.

LMITCO has established a variety of performance measures and indicators to evaluate company performance over a wide spectrum including worker safety. The primary mechanism for evaluation and reporting performance indicators was the monthly distribution of the LMITCO Environmental, Safety, Health and

Quality Assurance Performance Measures Trending Report in Support of Operational Excellence. This report, commonly known as the "stoplight report" due to the use of color coded indicators, was divided into three main sections: Site Areas, Programs, and Milestones of High Visibility. The ESH&QA performance for each main section was reported on a scale of 1 to 10 in color charts via a series of selected indicators such as "Environmental Management", "Worker Safety & Health", "Conduct of Operations", and "ISMS".

Interestingly, RWMC received a rating of 5.0 in the latest Performance Measures and Trending Report issued 9/9/99 for ISMS indicating that the goals were at significant risk and that corrective action was necessary to improve performance. On the other hand, WROC/PBF, which included the WERF facility, was rated at 9.0 for ISMS indicating acceptable or above average performance. In both cases, the ISMS rating was based solely on the percentage of ISMS implementation activities reported as complete. Under Conduct of Operations, RWMC and WROC/PBF were rated at 8.8 and 8.7 respectively. As noted in this report, however, the inability of employees to perform work as written in operational procedures and work orders calls into question the RWMC Conduct of Operations rating and the basis for the rating.

The color matrices generated by the LMITCO ESH&QA Performance Measures and Trending Report were found prominently displayed in high traffic areas throughout the site. When questioned concerning performance indicators, however, employees consistently described the Safety Severity Index (one component of the Worker Safety and Health metric) but could not associate the posted stoplight report matrices with ESH&QA performance indicators. Several interviewed employees mentioned the post-job review ratings routinely generated on MCP-3003 forms. During post-job reviews, employees rated specific jobs on a scale of one to five in areas such as readability of work instructions, detail of instructions, tool and material availability, and system readiness to begin work. At RWMC, these post-job ratings were periodically summarized in bar chart format. However, the post-job review data were not used for any of the metrics in the LMITCO ESH&QA Performance Measures and Trending Report. (see RMG-1 Assessment Form)

At both RWMC and WERF, workers were observed actively participating in the work planning process. During planning walkdowns performed at RWMC and WERF, craft and operator employees were considered essential to the planning team by the planners and the primary owners. In both walkdowns reviewed, planners encountered difficulties assembling the entire planning team at the job site. The RWMC planner stated that two or more planning walkdowns were typically required because the subject matter experts, safety specialists, engineers, operators and crafts were rarely available at any given time. Nevertheless, the interaction between planning team members during the observed walkdowns produced synergistic enhancements to the job strategy. Worker participation in the post-job briefing process added additional value to the planning process by

feeding back lessons learned to the planner for incorporation in subsequent work orders.

Conclusion

The objective has not been met at RWMC. The lack of rigor and discipline demonstrated by operators and craft personnel in the performance of written work instructions was judged a severe breakdown in the ISM process. Effective ISM implementation hinges upon the willingness of operators and craft personnel to abide by and execute procedures and written instructions.

The objective has been met for WERF. Although many of the operational procedures had not yet been modified via the MCP-3562 hazard identification and mitigation process, the resolve of management and the technical competence of the employees was judged adequate to carry the ISM process through to maturity.

Issue(s)

- Most of the operational procedures at WERF have not been reviewed under the MCP-3562 process and not all hazards identified were properly mitigated within the procedure for those that had completed the process. (ROP1-1)

- RWMC work orders lacked adequate technical direction and integration of hazard mitigation provisions within the work instructions. (ROP1-2)

- A lack of rigor and discipline exists at RWMC in the execution of operational procedures and work orders as written. (ROP1-3)

Strength(s)

- The observed processes to prioritize, coordinate, allocate resources and authorize work at RWMC and WERF were very effective. (ROP1-4)

Inspector_____ Carey R. Warren	**Team Leader**_____ Joseph Arango

Sub-Team: RWMC/WERF	**FUNCTIONAL AREA: SME.1** **DATE**: September 21, 1999

OBJECTIVE: SME.1 Within the radiological controls area the planning of work includes an integrated analysis of hazards, and development and specification of necessary controls. There is an adequate process for the authorization and control of work and a process for identifying opportunities for feedback and continuous improvement. Within the radiological controls subject area, line managers are responsible for safety; clear roles and responsibilities have been established; and there is a satisfactory level of competence. (CE II-2, CE II-3, CE II-4, CE II-5, CE II-6)

Criteria

1. Procedures and/or mechanisms for the radiological control area require adequate planning of individual work items to ensure that hazards are analyzed and controls are identified.

2. Procedures and/or mechanisms for the radiological control area contain clear roles and responsibilities. The radiological controls subject area is effectively integrated with line support managers to ensure that line managers are responsible for safety.

3. Procedures and/or mechanisms for the radiological control area require controls to be implemented, that these controls are effectively integrated, and readiness is confirmed prior to performing work. Workers are involved in planning of radiological controls.

4. Procedures and/or mechanisms for the radiological control area require that personnel who are assigned to the radiological controls subject area have a satisfactory level of competence.

5. Procedures and/or mechanisms for the radiological control area require that within the radiological control area feedback and continuous improvement results.

Approach

Record Review: The INEEL Radiological Control Program is described by PRD-183 "Radiological Protection-INEL Radiological Control Manual." Associated MCPs are located in Manuals 15A, 15B, and 15C. Review Manuals 15A, 15B, 15C and selected records that define the procedures and interactions required for the radiological controls at the facility or activity level. Assess the adequacy of the documents, such as Manual 15A, Chapter 3 "Conduct Of Radiological Work," to effectively integrate the radiological controls into the facility work control process. Review requirements of MCP-91 "ALARA Program and Implementation." Evaluate the program's success in reducing individual and collective

radiation exposure of the worker. Review ALARA Committee documents such as ALARA reviews for radiological work, Radiological Performance Goals, and recommendations for exposure reduction. Review the facility's success in maintaining exposure below established goals. (The inability to maintain radiation exposure at or below established goals may indicate a serious weakness in the hazards identification and control area). Evaluate if adequate consideration has been given to ALARA reviews and recommendations during the development of work control documents. Review work control documents noted in the Operations CRAD to ensure proper integration of radiological controls in the work control documentation. Review radiological work control documents to assess whether lessons learned have been effectively used within the radiological control area. Review training records of personnel in the Radiological Control organization and the site work force to determine if they meet competency standards listed in Chapter 6 of Manual 15A. Review the worker involvement in the ALARA processes.

Interviews: Interview personnel and responsible managers in the Radiological Control Organization to assess the establishment of clear roles and responsibilities and the understanding of the radiological controls support provided to line managers. Interview RadCon personnel to determine their understanding of the hazards identification and controls process and their input to this process. Interview personnel assigned to the Radiological Control Organization and the general site work force to assess the level of understanding and compliance with the ALARA program. Interview RadCon managers and technicians to determine their level of competency commensurate with assigned responsibilities. Interview members of the ALARA Committee to determine their understanding of their roles and responsibilities, as well as their competence, for being an ALARA Committee member. Interview the DOE-ID RadCon Manager, and facility line management to assess the establishment of clear roles and responsibilities, and effective interface with contractor activities.

Observations: Observe events such as the development of work control documents, development of a radiological hazards analysis such as a radiological work permit or job hazard analysis. Observe the review and approval process for radiological work control documents and individual work activities. Review the interactions between radiological control personnel and other facility personnel such as operations or maintenance during the execution of work activities. Attend any ALARA reviews or committee meetings. Observe work activities to ensure the controls specified by the hazards control documents and RadCon personnel are being implemented.

Record Review

- PRD-183, Company Manual 15A, Radiation Protection - INEL Radiological Control Manual, 9/16/96
- MCP-7, Radiological Work Permit, 7/1/99
- MCP-91, ALARA Program Implementation, 8/15/98
- MCP-542, Radiological Control Surveillance Plan, 8/28/98
- STD-101, Integrated Work Control Process, 8/26/99
- MCP-598, Process Deficiency Resolution, 4/1/99
- MCP-3562, Hazard Identification, Analysis & Control of Operational Activities, 7/31/99
- MCP-3003, Performing Pre-job Briefings and Post-job Reviews, 8/9/99
- MCP-2723, Reporting and Resolving Employee Safety Concerns and Suggestions, 8/24/98
- RadCon Manual Document Flowdown, Rev 1, 8/2/99
- Interdepartmental Communication from G. W. Clarke to Distribution, Assessment Program, GWC-001-99, 1/6/99
- Letter from G. L. Courtney to K. R. Whitham, Request for LMITCO Documentation to Show Compliance with the 10 CFR 835.10 "Internal Audits" Requirements (OPE-OS-98-174) – GLC-007-99, 3/16/99
- Surveillance INEEL-99-002, Radiological Control Program Internal Assessment, Design Review and Control Process Topical Surveillance, 3/8/99
- Agenda for RWMC ALARA Meeting, 9/15/99, including graph of Personnel Exposure versus Facility ALARA Goal through July 1999; RCIMS Report on RWP Information for RWMC, 9/13/99; and RCIMS Report on Individual Exposure by Facility for RWMC, 9/14/99
- Interdepartmental Communication from H. M. Brocksome to Distribution, ALARA Committee Meeting Minutes – HMB-20-99, 6/3/99
- Interdepartmental Communication from H. M. Brocksome to Distribution, ALARA Committee Meeting Minutes – HMB-15-99, 5/6/99
- Interdepartmental Communication from H. M. Brocksome to Distribution, ALARA Committee Meeting Minutes – HMB-04-99, 1/26/99
- Interdepartmental Communication from H. M. Brocksome to Distribution, ALARA Committee Meeting Minutes – HMB-03-99, 1/25/99
- Email from C. J. Green to Distribution, ALARA Committee Meeting, 9/16/99
- Administrative Preventative Maintenance Entry Form No. 2436, Schedule a Quarterly ALARA Committee Meeting, 9/16/99
- WROC APM Index and Scheduling Master Schedule, page 4, 9/99
- WROC ALARA Committee Meeting Agenda, 01/20/99
- Interdepartmental Communication from T. L. Carlson to F. L. Hinckley, Calendar Year (CY) - 1999 Facility ALARA Goals for the WROC, TLC-001-99, 01/26/99
- Interdepartmental Communication from T. L. Carlson to F. L. Hinckley, WROC/PBF ALARA Committee Charter, 10/20/98
- RCIMS Report on Individual Exposure by Org Code for WROC Operations, 9/16/99
- Interdepartmental Communication from T. L. Carlson to F. L. Hinckley, ALARA Committee Meeting Minutes – TLC-02-98, 9/24/98

- Interdepartmental Communication from T. L. Carlson to F. L. Hinckley, ALARA Committee Meeting Minutes – TLC-01-98, 7/8/98
- Form 325.01, Employee Position Description (position descriptions for the RadCon Supervisor, and selected Radiological Engineers and RadCon Technicians were reviewed)
- Employee Individual Training Plan (Total) (Web-based TRAIN Reports for RadCon Supervisor, and selected Radiological Engineers and RadCon Technicians were reviewed)
- INEEL Employee Training History (Web-based TRAIN Reports for RadCon Supervisor, and selected Radiological Engineers and RadCon Technicians were reviewed)
- Radiological Control Engineer Qualification Card, TRAIN Qualification Code: CTRCE001, 5/19/99
- Site Qualification Standard for PBF, WERF and WROC Radiological Control Technician, 8/17/98
- Site Requalification Standard for PBF, WERF and WROC Radiological Control Technician, 8/17/98
- Training Implementation Matrix (DOE 5480.20), RWMC RadCon Operations, updated 8/24/99
- PDD-WROC-01, Waste Reduction Operations Complex Training, 9/9/99
- Engineering Design File No.1111, Airborne Hazard Analysis for Pit 9 Installation of Cased Probeholes and Logging, 5/25/99
- Engineering Design File No. EDF/INT-98-01222, Pit 9 Stage 2/ Shielding Evaluation, 2/24/99
- Informal Note from W. R. Horne to R. D. Sayer, Response to the Inquiry from Richard Dickson on the Pit 9 Compliance with 10 CFR 835.1002(a), 8/27/99
- Radiological Control Pre-job "Planning" Checklist, OU 7-10 Interim Action-Stage I Phase I Soil Moisture Downhole Logging, 8/31/99
- Radiological Control Pre-job "Planning" Checklist, OU 7-10 Interim Action-Stage I Phase I Soil Moisture Probehole Installation, 8/31/99
- Letter from T. L. Clements to G. L. Beausoleil and K. R. Whitham, Response to Radiological Controls Concerns Regarding OU 7-10 Staged Interim Action (OPE-RWMC-98-085) – TLC-171-98, 11/30/98
- RWMC Work Order No. 11592, 15007, 15336, and 15870
- Occurrence Report No. ID-LITC-WROC-1999-0002, Tritium Monitoring Procedure Violation, 9/7/99
- Email from W. L. Nees to RadCon Supervisors and Foremen, Changes to MCP-362 Tritium Monitoring, 9/1/99
- Email from C. A. Filby to R. D. Sayer, Tritium Smears, 9/13/99
- WROC POD/POW (Plan of the Day/Plan of the Week), 9/13/99 – 9/19/99, revised 9/16/99
- Radiological Control Pre-job "Planning" Checklist for RH-TRU (Remote Handled Transuranic) Retrieval (undated draft)
- RWMC-109-M#, WMF 632, 633 Self Assessment Checklist and attached Job Safety Analysis, 11/24/98

- RWMC Corrective Action Work Group (CAWG) Agenda, 9/14/99, including bar chart of ICARE Issue Status, Summary of Self-Assessments for 9/14/99, Safety Concern Report Nos. 8313 and 8398, list of overdue Nonconformance Report, and list of Open Issues
- Interdepartmental Communication from K. Rogers to RWMC Corrective Action Work Group (CAWG), RWMC CAWG General Meeting NMR-125-99, 9/13/99
- RWMC RadCon Surveillance Report Nos. 99-001 to 99-008, and 99-010 to 99-020
- List of RWMC Process Deficiency, Employee Safety Concerns and Suggestions, and Self Assessment Observations
- RWMC Process Deficiency Report No. 8437, 9/2/99
- RWMC Operations Safety Board (OSB) Agenda, 9/15/99
- Listing of Radiological Work Permits at WERF, 09/16/99
- Interdepartmental Communication from C. J. Greene to R. D. Sayer, Second Quarter CY-99 RadCon Surveillance Program for WROC Facilities – CJG-05-99, 7/15/99
- WERF RadCon Surveillance Report Nos. WRO-99-024, WRO-99-023, WRO-99-022, WRO-99-021, WRO-99-019, WRO-99-016, WRO-0990-14, WRO-99-012, WRO-99-011, WRO-99-005 (including associated Self Assessment Report Forms for some surveillances)
- WERF Process Deficiency Report (PDR) No. 7258
- WERF Employee Suggestion or Concern (ESC) Nos. 246, 8095, and 8112
- Hazards Identification & Mitigation Checklist for Work Control Form 3455, Remove/Clean the Silencer and Heat Exchanger on the Dust Transfer System, 7/1/99
- Walkdown Checklist for IWCP HIM Process, R&R Heat Exchanger and Silencer & Clean, WCF No. 3455, 9/17/99

<u>Interviews Conducted</u>

- DOE-ID Facility Director
- DOE-ID Radiological Controls Manager
- RWMC/WROC Radiological Controls Supervisor
- Interim Staged Action Radiological Engineer
- RWMC Radiological Engineer
- RWMC Secretary
- RWMC Environmental Compliance Engineer
- Seminar-style interview with three RWMC Shift Supervisors (some individuals are also assigned the Senior Supervisory Watch)
- RWMC Planner
- WROC Radiological Engineer
- WROC Radiological Control Foreman
- WROC Radiological Control Technicians
- WROC ESH&QA Manager
- WROC/PBF ALARA Committee Chairperson
- WERF Shift Supervisor
- WERF Planning Supervisor
- WERF Systems Engineer
- WERF Electrical Leadman

- WERF Mechanical Foreman

Observations

- RWMC DOE-ID Facility Director Staff Meeting
- RWMC Plan of the Day Meeting
- RWMC Pre-job Briefing for Self-Assessment Walkabouts
- RWMC Corrective Action Working Group Meeting
- RWMC Operations Safety Board Meeting
- RWMC ALARA Committee Meeting
- WERF Plan of the Day Meeting (2)
- WERF Pre-job Briefing, Preventative Maintenance on Blowers (GF-2W-1)
- WERF RadCon Technician Turnover
- WERF Demonstration of the preparation of electronic Radiological Work Permit
- WERF Job Planning Walkdown - removal, repair and cleaning of the Heat Exchanger and Silencer (WCF No. 3455)

Discussion of Results

Planning of work at the RWMC and WROC facilities is performed under STD-101, Integrated Work Control Process (IWCP) for maintenance and construction work, and MCP-3562, Hazard Identification, Analysis & Control of Operational Activities. Under STD-101, a Work Control Form is initiated which provides a description of the work to be performed. If the work is a maintenance-related task (MRT) or routine maintenance, then pre-approved hazard analysis matrices are used to identify hazards, including radiological hazards. For tasks that are not MRT or minor maintenance, the hazard identification and mitigation (HIM) process is used to identify hazards. Additionally, the Walkdown Checklist for IWCP HIM Process is used as part of the process for identifying hazards associated with the work. For operational activities conducted under MCP-3562, the manager or primary owner is responsible for considering hazards, such as those identified in the Facility Hazards List and the facility safety analysis, preparing the Hazards Screening Checklist, and assembling the Hazard Evaluation Group. Both processes include mechanisms for identifying potential radiological hazards in the work place. If radiological hazards are identified and work will be performed in a radiological area, radiological control (RadCon) personnel are provided with a detailed description of the work and a Radiological Control Pre-job "Planning" Checklist (or equivalent) in accordance with MCP-7. RadCon personnel are responsible for the preparation of a Radiological Work Permit (RWP). The RWP establishes radiological controls for the work and informs workers of area radiological conditions and entry requirements. The RWP is the key element in the integrated safety management system for authorizing and controlling radiological work conducted at the INEEL.

Roles and responsibilities for the radiological control program are clearly identified in program description documents (PDD-1004 and PDD-1005), program requirement documents (PRD-183), and management control procedures (STD-101, MCP-3562, MCP-7, MCP-91, and MCP-542). The relationships between the Area ESH&QA Managers, the

LMITCO RadCon Manager (i.e., a Functional Support Manager), and line management are clearly established, and line management is responsible for safety.

The ALARA Program established in MCP-91 provides a general framework for incorporating controls into work that may involve exposure to radiation and radioactive material. An INEEL ALARA Committee and individual facility ALARA committees are established to help administer and promote ALARA activities. These committees provide opportunities for workers to participate in the establishment of the annual facility ALARA budget, and individual ALARA goals. These committees coordinate, promote, and document activities that reduce occupational radiation exposures and minimize the spread of radioactive materials.

Planning for specific work tasks in radiological areas includes multiple opportunities for identification of potential hazards and development of mitigating controls. Workers and subject matter experts (e.g., RadCon technicians, foremen, and engineers) participate in job planning walkdowns. The Radiological Engineer must perform a formal ALARA Review when trigger limits in MCP-91 are exceeded. The ALARA Review considers the need for controls such as hold points in work control documents, decontamination of facilities and process lines, use of engineered features, and use of mockups prior to performing the work. Criteria are also established that require a review by the facility ALARA Committee for higher dose tasks, work activities that are infrequently performed, or first time operations.

The RWMC ALARA Committee meeting on September 15, 1999, included a review of a project to retrieve remote handled TRU waste from storage vaults. The committee exhibited a healthy inquisitiveness about the proposed project, potential hazards and controls, and possible upset conditions. In this instance, the committee stipulated that the project manager had to return to a future meeting to discuss the results of mockups tests that will be conducted to verify work control procedures. RWMC personnel were also assigned to witness the mockup activities and report back to the ALARA Committee. Additionally, the ALARA Committee reviewed the 1999 ALARA budget for the RWMC to ensure that it remained challenging. The budget currently includes work that will not occur this year, and ALARA measures taken earlier in the year are continuing to provide dose savings. Revisions and reductions in projected doses for individual jobs and activities were considered as part of the review process.

The WROC/PBF Facility ALARA Committee has not met since January 20, 1999. Although radiation doses to workers in the WROC facilities are relatively low the WROC/PBF Facility ALARA Committee is a key element of the LMITCO radiation protection program and is essential to the implementation of the ALARA process. The WROC/PBF ALARA Committee needs to be revitalized as demonstrated by the failure to hold quarterly meetings. (RSME1-1) The requirement for a quarterly meeting has been placed onto the WERF Administrative Preventative Maintenance (APM) program and a meeting was scheduled. The APM program is used to track administrative commitments, such as recurring meetings, to help ensure that they will not be forgotten or overlooked.

Evidence of the incorporation of sound ALARA practices in day to day work was found at both the RWMC and WERF. Design reviews and Radiological Control Pre-job Planning Checklists were reviewed for activities that are being planned at the interim staged action at Operable Unit 7. Proposed activities at the interim staged action have also been presented to the RWMC ALARA Committee for review and comment on several occasions during the last year. In the new storage modules at the RWMC, transfer of the containers was controlled to minimize worker exposure, and higher dose rate drums were placed in the middle of stacks where they are shielded by the drums on the outside edges. During a Plan of the Day meeting special arrangements were made to process a drum reading 80 mR/hr at contact and move it expeditiously from the facility when the inspection was completed. At WERF a new long-handled tool has been developed to clean the heat-exchanger tubes allowing workers to perform the job faster and away from the contaminated fly ash. At the WERF Sizing Facility items are wiped down to remove surface contamination before cutting is performed.

Employee Position Descriptions (Form 325.01), Individual Training Plans, and Employee Training Histories for the RadCon Supervisor, and selected Radiological Engineers and RadCon Technicians were reviewed. Position descriptions identified general roles and responsibilities for these individuals. The RadCon Supervisor, Radiological Engineers, and RadCon Technicians at the RWMC and WROC all participate in qualification programs. In addition to the qualification program, the employee and supervisor establish an Individual Training Plan that establishes required training in order to maintain continuing competency and proficiency. The Radiological Engineers are cross-trained to both the RWMC and WROC in order to provide backup capabilities and peer-review of work products.

Circumstances leading to an off-normal occurrence pertaining to a tritium monitoring procedure violation on September 7, 1999, were reviewed. On August 8, 1999, a revision to MCP-362, Tritium Monitoring, became effective. In accordance with company procedures the revised procedure was reviewed by the Facility Training Review and Implementation Board (FTRIB). The RadCon organization proposed that the training for this revision be provided as routine continuing training for RadCon personnel. However, a misunderstanding occurred and the FTRIB changed the training requirements to required reading. The RadCon organization was not aware of this change until after the procedure was issued. The RadCon organization subsequently sent out the required reading assignment on September 1, 1999, almost 3 weeks after procedure implementation. The RadCon foreman was not on the distribution to receive routine notifications of the procedure changes. Distribution of controlled hard-copies of the revised procedure should have been sent to WERF, but were about 3 weeks late. The root cause and corrective actions for this occurrence are still under development; however, there appears to be several opportunities for improvement. (RSME1-2)

Several mechanisms exist for providing feedback and continuous improvement. At a company level post-job reviews conducted under MCP-3003 provide an opportunity for workers to provide suggestions for improvement on specific jobs. Employees also have the ability to submit safety concerns and suggestions through the Issue Communication and Resolution Environment (ICARE) system in accordance with MCP-2723.

The RadCon organization has an internal assessment program that evaluates all functional elements of the radiological program at least every three years. This program utilizes the process defined in the Radiological Control Surveillance Plan in MCP-542. Additionally the RadCon organizations at RWMC and WROC implement an internal self-assessment program as required by MCP-542. The company and facility assessment programs identify programmatic and implementation deficiencies. At the facility level deficiencies judged important in terms of program performance are being entered into the Process Deficiency Resolution (PDR) program defined in MCP-598. Greater use of the PDR process was noted during recent months. RadCon personnel are continuing to struggle with establishing a reasonable threshold for entering items into the formal PDR process. Minor deficiencies, such as barrier ropes that have fallen down, minor houskeeping problems, and faded signs are being tracked through processes defined in MCP-542. The LMITCO Issue Management Department Manager indicated that training was being planned on a company-wide basis for workers to help clarify what information was intended for inclusion in the PDR process. Based on interviews RadCon personnel have not yet taken advantage of the quick-close option that is available in the PDR process for minor deficiencies (MCP-598, Sec. 4.4.1). This quick-close option may help relieve some of the administrative burden of processing minor deficiencies.

Flowdown of requirements from the INEL Radiological Control Manual (PRD-183) was also reviewed. Inadequate flowdown of requirements was identified as an issue in the ISMS Phase I verification. LMITCO has developed a RadCon Manual Document Flowdown matrix that crosswalks all the requirements of the INEL Radiological Control Manual to implementing company procedures. There are 1388 requirments identified in the INEL RadCon Mnaul. About 230 of these requirements are listed as being directly implemented (without procedural direction). The compliance status is listed as not implemented for 25 requirements, partial implementation for 27 requirements, and unknown implementation for 30 requirements. Most of these items are listed as being directly implemented. In some instances, such as control of contaminated drains and minimization of radioactive liquid wastes, the programmatic responsibility and accountability for determining how the requirements will be implemented appears to be outside of the RadCon organization. A mechanism for ensuring the flowdown of these radiological requirements to the responsible implementing organizations has not been established. (RSME1-3) Interviews with RWMC/WROC RadCon Supervisor and WROC Radiological Engineer suggest that they are aware of that some requirements in the INEL Radiological Control Manual are implemented directly. However, they were unable to comprehensively identify the accountability for directly implemented requirements. (RSME1-4) The Radiological Support organization is currently evaluating requirements of unknown implementation status so that the flowdown matrix can be updated.

Conclusion: The objective has been met. The analysis of radiological hazards and development of controls is integrated into the work planning process. The Radiological Work Permit is used to authorize and control radiological work. Opportunities exist for workers to provide feedback. A self-assessment program provides opportunities to identify and correct problems on a continuing basis. Clear roles and responsibilities have been

established, and radiological control personnel interviewed had a satisfactory level of competence commensurate with responsibility.

Issue(s)

- The WROC ALARA Committee, a key element of the ALARA Process defined by LMITCO, has not been holding quarterly meetings as required in their charter. (RSME1-1)

- Company-level mechanisms to ensure that personnel were adequately trained and aware of the implementation of revisions to MCP-362 were not successful. (RSME1-2)

- Flowdown of the final 82 requirements from the INEL Radiological Control Manual into company procedures is not complete. (RSME1-3)

- Mechanisms have not been established to ensure responsibility and accountability for the 230 radiological program requirements that are to be implemented directly (without incorporation into company procedures). (RSME1-4)

Strength(s)

- None

Inspector_____ Richard L. Dickson	**Team Leader**_____ Joseph Arango

IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY

INTEGRATED SAFETY MANAGEMENT SYSTEM PHASE II VERIFICATION

REVIEW PLAN

August 1999

Joseph Arango
Integrated Safety Management System Verification
Team Leader

Table of Contents

1.0 INTRODUCTION/BACKGROUND

Department of Energy (DOE) Safety Management System Policy 450.4 (P 450.4), defines the expectations that DOE facilities will be operated in accordance with an Integrated Safety Management System (ISMS). The DOE Acquisition Regulations (DEAR, 48 CFR 970) further require that the Head Contracting Authority (Idaho Operations Office [ID] Manager) provide guidance to the contractor as to the expectations for the ISMS Description. The ID Manager guidance and expectations for the Idaho National Engineering and Environmental Laboratory (INEEL) were provided to the contractor by letter J. M. Wilcynski to W. John Denson, Subject: System Description Document Development and Implementation for Contract DE-AC07-94ID13223 (OPE-OS-98-041), dated April 2, 1998. This guidance was updated by letter J. M. Wilcynski to W. John Denson, Subject: Transmittal of Revised Contracting Officer Guidance On Integrated Safety Management System Description Document Development and Implementation for Contract DE-AC07-94ID13223 (OPE-OS-98-104) dated July 29, 1998.

In response to that direction, Lockheed Martin Idaho Technologies Company (LMITCO) submitted the proposed Safety Management System Description Document (PDD-1004, Revision 1) for approval on March 10, 1999, (Letter WJD-28-99). The ISMS Description Document (PDD-1004, Revision 2) was approved by the ID Manager on April 28, 1999 (Letter OPE-ISM-99-035) after successful completion of a Phase I ISMS Verification and successful incorporation of Verification Team comments. The current version of the approved ISMS Description Document is PDD-1004, Revision 3.

Each site within DOE is to verify that the ISMS Description: 1) fulfills the expectations of the Head Contracting Authority, meets the requirements of the DEAR and the DOE Policy for Safety Management Systems; and 2) that the Description is implemented. The verification reviews are to be conducted in accordance with the protocol for the ISMS Verification process specified by Under Secretary of Energy Memorandum of March 1997, Protocol for Review and Approval of Documented Safety Management System Descriptions Associated with Defense Nuclear Facilities; and DOE G 450.4-1, Integrated Safety Management System Guide. As described in the Verification Protocol and the ISMS Guide, the ISMS Verification will be conducted in two phases. The ISMS Verification Phase I was to verify the adequacy of the description and the ISMS Verification Phase II will verify implementation of the ISMS. This Review Plan (RP) is for conduct of the ISMS Phase II Verification at INEEL.

The ID Manager appointed Joseph Arango as Team Leader for the ISMS Verification Phase II in her memorandum dated July 22, 1999 (Appendix III). The tasking memorandum specified the scope of the review and the desired deliverables. This RP will define the review and procedures that will be followed to conduct the review in support of the ID Manager.

2.0 PURPOSE

The purpose for the INEEL ISMS Verification Phase II is to provide a recommendation to the ID Manager concerning implementation of ISMS, and to delineate areas, if any, in which implementation does not conform to the approved ISMS Description. In assessing the adequacy of the ISMS implementation, the ISMS Verification Phase II will consider the results of previous reviews such as the ISMS Verification Phase I and the Type A Accident Investigation Team Report prepared following the July 1998 worker fatality. The final report of the INEEL ISMS Verification Phase II will discuss the progress and effectiveness of the implementation efforts in the selected Site Area/facilities.

3.0 SCOPE

The scope of the INEEL ISMS Verification Phase II will include the ISMS for the following INEEL Site Area/facilities and activities managed and operated by LMITCO under Contract DE-AC07-94ID13223 including the integration with the ID: Advanced Test Reactor (ATR), Radioactive Waste Management Complex (RWMC), Waste Experimental Reduction Facility (WERF), Idaho Research Center (IRC), and the Transportation Complex (Big Shop). Other INEEL Site Areas and facilities are excluded from the scope of this review. More specific information on the facilities which are within the scope of the review is included in Section 7. The ISMS Verification Phase II will evaluate the adequacy of the ISMS implementation when compared to the approved ISMS Description. In assessing the adequacy of the ISMS implementation, the ISMS Verification Phase II will consider how the described site-wide corporate system is coordinated and integrated “downward” to the individual facility and work processes. At the facility or process level, the mechanisms, which identify, evaluate, control and assess individual work items will be assessed as key indicators of the adequacy of the implementation. The review will assess the adequacy of the programmatic documentation at the facility level. Integration between LMITCO and ID as well as the integration within LMITCO from the site-wide to the process specific implementation will also be reviewed. By reviewing supporting documents, interviewing individuals within the facilities, and observing the accomplishment of selected work processes, the ISMS Verification Phase II will be able to draw conclusions as to the adequacy of the ISMS implementation. The scope of the review at INEEL will include all eight ISMS Core Expectations (Appendix II) included in the ISMS Verification Team Leader’s Handbook, which will result in evaluation of the core functions and guiding principles for Integrated Safety Management as defined in the DOE P 450.4.

4.0 PREREQUISITES

The significant prerequisite for the ISMS Verification Phase II is that the INEEL ISMS Description Document be approved and implemented in the selected Site Area/facilities,

or that implementation plans be in place with significant progress having been made. Additional prerequisites to the ISMS Verification Phase II include: appointment of the Team Leader, identification and approval of the team by the ID Manager, development of the RP, Team Leader approval of the RP, and confirmation that team member individual knowledge and understanding of the site, Integrated Safety Management, and the ISMS Description being implemented are adequate to effectively conduct the review.

5.0 OVERALL APPROACH

The ISMS Verification Phase II Team will review the ISMS implementation in the selected Site Area/facilities at INEEL. The Verification Team will evaluate the progress and effectiveness of the implementation efforts against the guiding principles and core functions defined in DOE P 450.4. Based on this assessment, the ISMS Verification Phase II Team will draw conclusions and make recommendations to the ID Manager as to whether the ISMS implementation is achieving the overall objective of Integrated Safety Management which is described as follows:

> "The Department and contractors must systematically integrate safety into management and work practices at all levels so that missions are accomplished while protecting the public, the worker, and the environment. This is to be accomplished through effective integration of safety management into all facets of work planning and execution. In other words, the overall management of safety functions and activities becomes an integral part of mission accomplishment."

The ISMS Verification Phase II will be conducted using sub-teams as defined in more detail under Section 7.

5.1 Sequence of Activities

The first step in the ISMS Verification process is to provide training and interaction among the team members to ensure an adequate understanding of the DOE ISMS Policy expectations, the specific INEEL ISMS Description, and the plan and strategy for the review. The Team Leader will ensure that the team has received training on DOE Acquisition Regulations 970.5204-2, "Integration of Environment, Safety, and Health into Work Planning and Execution" and 970.5204-78, "Laws, Regulations, and DOE Directives". As a final action of this initial effort, the team will complete preparation of the Criteria and Review Approach Documents (CRADs) which will guide the review. The final CRADs are attached as Appendix II of this RP. The indoctrination period of about four days, including CRAD development and some initial briefings will be conducted at the INEEL a week or two prior to the start of the ISMS Verification Phase II. This initial period will be utilized by DOE-ID and LMITCO to provide ISMS presentations and briefings to update the Verification Team on implementation progress since the ISMS Phase I Verification. The team member's Biographies are included as Appendix I of the RP.

The ISMS Verification Phase II review will be concluded during two-week periods following preparation of the RP, development of the CRADs, and completion of the team

indoctrination. The review will consist of completing any necessary Site Area/facility specific briefings from LMITCO and ID to the team during the first week, as well as interviews, observations, and document reviews. Any additional actions that may be necessary to support review and assessment of the supporting program and process documents, and implementation will be identified as the review progresses. The second week will be used to complete the interviews, observations, and documentation reviews, as well as the completion of the Assessment Forms, the preparation of the Final Report and any related activities. A report will be issued at the completion of the second week. Additional details on the review may be found in Section 7.

During the second week of the verification review, the team members will complete their evaluation of the criteria in the individual CRADs that will support conclusions as to whether the individual objectives have been met. The evaluation of the criteria will result from the presentations coupled with the interviews, observations, and documentation reviews conducted during the two-week period. An important input to all efforts will be the observations and discussions with individuals within the facilities who explain and defend their ISMS at their individual levels of responsibility. The record of the evaluation will be the Assessment Form. An Assessment Form will be prepared for each Objective in the CRADs and will document the basis for the conclusions reached concerning the objective and criteria. Each Assessment Form will conclude with a set of numbered issues or observations which will be rolled up to "Opportunities for Improvement" in the Executive Summary of the Final Report. Issues identified during the review of the individual CRAD which warrant the attention of the ID Manager or senior LMITCO management will be clearly identified within the Assessment Form. In addition, good practices and strengths of the ISMS will be identified as “Noteworthy Practices.”

Each CRAD is intended to guide the evaluation of the adequacy of the ISMS implementation. Detailed instructions for completing the Assessment Form will be provided to the ISMS Verification Phase II Team prior to and during the review.

A Final Report will be prepared which will describe the results of the ISMS Verification Phase II. The report will provide a recommendation to the ID Manager concerning implementation of ISMS and delineate areas, if any, in which implementation does not conform to the approved ISMS Description. The report will provide the conclusions reached by the review team as to the status of implementation of ISMS in the selected Site Area/facilities. The contents of the report are described in Section 9.

6.0 PREPARATIONS

Preparations for the ISMS Verification Phase II will focus on two areas. The first is intended to prepare the team to conduct the review and finalize the RP that will guide the conduct of the review. The second effort is to assist LMITCO and ID in gaining an understanding of the review process in order that they may most effectively present their ISMS implementation to the ISMS Verification Phase II Team.

6.1 ISMS Verification Phase II Team Preparations

Efforts to prepare the team to conduct the ISMS Verification Phase II will include ensuring completion of training on the relevant DEAR clauses as discussed in Section 5.1. There will also be a discussion on the strategy and methodology for the review. This portion will include a discussion of the strategy and logic by which the CRADs and sub-teams were developed. Also, the discussion will include thoughts on tailoring methods for the review to increase confidence that the review results will reflect the implementation of the INEEL ISMS. Finally, the team will receive briefings and discussions to ensure an understanding of the progress in implementation since approval of the ISMS Description by the ID Manager. The briefings on the ISMS will include discussions on the ID counterpart elements and integration of ID functions with the INEEL ISMS. The review will verify that the responsibilities, activities and processes of the ID staff are appropriately described and integrated with the INEEL ISMS at the facility and work process levels.

6.2 LMITCO and ID Preparations

The responsible LMITCO and ID Managers will present their implementation of ISMS, consistent with the approved Description document, to the team so that a basis for interviews, observations and further document reviews can be formed. It is important, therefore, that the individual Managers have an understanding of the expectations of the ISMS Verification Phase II and have an understanding of the ID expectations for ISMS implementation. In order to enhance the validity of this premise, efforts will be undertaken by the ISMS Verification Phase II Team leadership to enhance the understanding of the LMITCO Managers of the expectation of the ISMS Verification Phase II Team.

The briefings will consist of LMITCO and ID making presentations to the team to describe how the approved ISMS Description has been implemented consistent with DOE P 450.4, the ISMS DEAR clauses, and the requirements of the ID Manager. The briefings should include identification and a brief description of supporting program and process documents at the Site Area/facility level, as well as any self-identified gaps in the ISMS implementation plans. These presentations should also describe the integration of safety management between LMITCO and ID, and within LMITCO at the Site Area/facility level. At the conclusion of the presentations, the ISMS Verification Phase II Team will review documentation, interview selected personnel, observe work processes, and complete the other necessary actions to support the review.

7.0 PROCESS FOR ISMS REVIEW

As described in Section 5 above, the review will be conducted using the CRADs. The CRADs for the review are included as Appendix II of the RP. The CRADs are identified by functional area and they will be used by each of the three sub-teams to form a common basis for the review. The functional areas are Hazards Identification and Standards Selection (HAZ), Management (MG), Operations (OP), and DOE-ID (DOE). The three ISMS Verification Phase II sub-teams are:

Advanced Test Reactor (ATR)

Radioactive Waste Management Complex/Waste Experimental Reduction Facility (RWMC/WERF)
Idaho Research Center/Transportation Complex (IRC/Big Shop)

The ISMS Verification Phase II Team will review ISMS implementation at the first five Site Area/facilities that have implemented the approved ISMS Description at INEEL. The remaining INEEL Site Area/facilities are implementing ISMS in a phased approach and are expected to undergo future verifications.

The ATR sub-team is tasked to review how the site-wide ISMS is coordinated and integrated into the individual work processes within the Advanced Test Reactor, a Hazard Category 1 nuclear facility. Also included within the scope of the ATR sub-team review is the implementation of ISMS at the ATR Criticality Facility (ATR-C) and the Nuclear Materials Inspection and Storage (NMIS) Facility. This will include a review of the integration with ID under the terms and conditions specified in the approved authorization agreement.

The RWMC/WERF sub-team addresses the ID and LMITCO team processes for the safe accomplishment of work in the Radioactive Waste Management Complex Site Area as well as in the Waste Experimental Reduction Facility. This will entail a review of work processes for Hazard Category 2 nuclear facilities as well as non-nuclear, radiological and other industrial facilities. Within RWMC, ISMS implementation will be assessed at the Subsurface Disposal Area (SDA), the Transuranic Storage Area (TSA) and the Administrative Area. Included within the TSA is the TSA Retrieval Enclosure (TSA-RE, WMF-636), the Stored Waste Examination Pilot Plant (SWEPP, WMF-610), the TRUPACT Loading Facility (WMF-618), the Type I Storage Module (WMF-635), and six Type II Storage Modules (WMF-628 through WMF-633). Within WERF, ISMS implementation will be assessed at the Sizing and Compaction Facility (PER-622), and the Incineration Facility (PER-609).

The IRC/Big Shop sub-team will review the ISMS implementation for research work in the Idaho Research Center facilities as well as industrial work at Big Shop within the Central Facilities Site Area. Within the scope of the review at IRC (including the IRC Laboratories IF-602 and IF-603), the sub-team will assess ISMS implementation at the Physics Lab (IF-638), the Battery Facility (IF-605), the INEEL Engineering Demonstration Facility (IEDF, IF-657), the IRC Chemical Storage Facility (IF-655), the System Analysis Facility (SAF, IF-627), and the SAF Lab (IF-611). Within the scope of the review for the Big Shop is the LNG Dispensing Facility and the Propane Dispensing Facility.

Two of the sub-teams will also address one of a selected set of specific crosscutting areas using the Subject Matter Expert (SME) CRAD. The SME CRAD will be utilized to assess whether the core functions and guiding principles of ISM are met for the control of work within the specific disciplines of radiation protection and configuration management. Even for the sub-teams not utilizing a particular SME CRAD, the radiation protection and/or configuration management areas will be reviewed using criteria from the OP and MG CRADs.

In addition, the evaluation of maintenance and work control will be considered by all of the sub-teams using the OP CRAD since this discipline normally demonstrates the essence of safely conducting work. Likewise, quality assurance and training and qualification areas will be evaluated by all sub-teams using criteria from the DOE and MG CRADs.

The review of the individual CRADs will assess the status of the ISMS implementation and will support the Verification Phase II Team's conclusions and recommendations with regard to work being done safely and in accordance with the principles and functions of DOE P 450.4. The results from these activities will be included in the final report.

8.0 ADMINISTRATION

8.1 Meetings and Presentations

Part one of the review will include presentations by LMITCO and ID to the ISMS Verification Phase II Team. The purpose for the presentations will be to provide an opportunity for the team to be updated with the implementation progress since the ISMS Description was approved. The presentations will provide an opportunity for LMITCO and ID to describe the manner in which the elements of ISM described in the various programs are implemented at the Site Area/facilities level resulting in an ISMS which fulfills the expectations for DOE P 450.4 and the DEAR requirements. The ISMS Verification Phase II Team will utilize the information provided during the presentations as a basis to proceed with the verification that the criteria and the objectives in the individual CRAD are met. Additional interviews, record reviews observations and other activities at the Site Area/facilities level will form the majority of the review effort.

The INEEL ISMS Verification Phase II will be an open process with the goal of maximizing the opportunity to achieve a full understanding of the ISMS implementation. This in turn will result in an accurate assessment of the progress and status of implementation and a recommendation to the ID Manager. In order to achieve the level of openness and coordination which is desired, the team will meet daily to discuss observations and issues. Site personnel are invited, in limited numbers, to attend these team meetings as observers. The Team Leader and Advisor will meet as necessary with senior LMITCO and ID management to ensure that they are fully informed of the progress and issues during the ISMS Verification Phase II.

Following the review portion of the ISMS Verification Phase II, the Team Leader will conduct an outbrief with LMITCO and ID Managers as well as appropriate Site Area/facilities personnel. The briefing will include the results of the review, the basis for the recommendation that will be made to the ID Manager concerning ISMS implementation and a summary of strengths or issues that arose during the review.

8.2 Documentation of the ISMS Verification Phase II

The ISMS Verification Phase II will be guided by the criteria in the CRADs. The documentation will be structured in a manner to show that the elements of the CRADs were evaluated and that the objectives were met or what aspects of the objectives were

found to be deficient. The purpose of the documentation is to provide information concerning details of the review to individuals who did not witness the review.

In order that the schedule for the ISMS Verification Phase II is maintained and that the report is complete prior to dissolution of the team, each team member must document his work as it is conducted. This means that daily inputs to the Assessment Form should be planned. Each sub-team leader will be provided with a preliminary Assessment Form containing the objective and criteria for each CRAD. In the event that issues of noteworthy or questionable practices are identified, they will be documented within the Assessment Form. If the final report to the ID Manager recommends actions for LMITCO or for ID, those actions should be supported by detailed information on the Assessment Form. The team members are responsible for ensuring that the Assessment Forms do not contain classified or Unclassified Controlled Nuclear Information (UCNI).

The lessons learned from the INEEL ISMS Verification Phase II are particularly important for future reviews. Team members will draft lessons learned inputs and provide those inputs to the Team Leader. Those inputs will be used for a composite lessons learned for future use.

8.3 Team Composition and Organization

The ISMS Verification Phase II Team was formed using a majority of members from the Phase I Verification Team at INEEL in order to maintain continuity and to capitalize on team members' knowledge of the INEEL ISMS from the review of the description document. Since the focus of the Phase II Verification is on implementation, the Phase II Team membership was filled out with other individuals who are familiar with the conduct of work at the Site Areas and in the INEEL facilities. The ISMS Verification Phase II Team is organized into three review sub-teams using an integrated set of CRADs. Sub-team leaders are responsible for ensuring that all CRADs assigned are fully evaluated and that the appropriate documentation is prepared. The Biographies and Qualification Summaries for each team member are in Appendix I and will be retained with the records of the ISMS Verification Phase II.

9.0 FINAL REPORT FORMAT

At the completion of the review, the team will prepare a report. The report will include a recommendation to the ID Manager concerning ISMS implementation and will delineate areas, if any, in which implementation does not conform to DOE P 450.4, the ISMS DEAR clauses, and the approved ISMS Description. The report will also provide an assessment of the adequacy of supporting program and process documents, and implementation at the Site Area/facilities level. The report will discuss a path forward associated with verification of the completion of implementation actions at other INEEL Site Area/facilities and/or verification of corrective actions identified during the ISMS Verification Phase II.

The report of the ISMS Verification Phase II will consist of the following sections that fully describe the review, provide the necessary recommendations, and provide information

necessary to support the recommendations. Team members should not include any classified or UCNI material in the report. The Team Leader will ensure that the final report is appropriately controlled and reviewed for classified information or UCNI prior to issuance.

TITLE PAGE - the page that states the Site and the dates of the review.

SIGNATURE PAGE - the page used by the Team Leader to promulgate the final version of the report.

TABLE OF CONTENTS - identifies all sections and subsections of the report, illustrations, tables, charts, figures, and appendices.

EXECUTIVE SUMMARY - provides an overview of the results of the ISMS Verification Phase II including a summary of the recommendations that result from the review. The executive summary will identify opportunities for improvement (issues) as well as noteworthy practices (strengths) identified during the review.

INTRODUCTION - includes the overall objectives of the evaluation; the review process and methodologies used in the review; and the team composition.

PURPOSE - includes the purpose of the ISMS Verification Phase II.

SCOPE - includes the scope of the ISMS Verification Phase II.

OVERALL APPROACH - restates (with any necessary modifications) the approach followed during the ISMS Verification Phase II and delineated by the RP.

ASSESSMENT OF INEEL ISMS - provides a summary discussion of the overall results of the evaluation. This section will include an integrated summary of the information developed by each sub-team including the opportunities for improvement (issues) as well as noteworthy practices (strengths) identified during the review. In addition, this section will provide details of the review, which are necessary to support the recommendation to the ID Manager concerning LMITCO ISMS implementation. This section will also provide support for any recommendations or observations associated with ID. The report will also discuss the observations and conclusions of the team regarding the adequacy of supporting program and process documents at the Site Area/facilities level. Finally, any deviations from this RP will be discussed in the report.

CONCLUSIONS AND RECOMMENDATION - will address the adequacy of the ISMS implementation with a recommendation to the ID Manager. It will further provide information about the path forward associated with verification of the completion of implementation actions at other INEEL Site Area/facilities and/or verification of corrective actions identified during the ISMS Verification Phase II.

LESSONS LEARNED - will discuss lessons learned associated with the ISMS Verification Phase II process as well as with the development and implementation of an ISMS.

VOLUME II - will include the Assessment Forms, the Review Plan and the CRADs.

10.0 SCHEDULE

For planning purposes, the projected schedule for the ISMS Verification Phase II at INEEL is as follows:

August 23 to August 26, 1999: Team receives site-specific training, discusses the verification process, completes sub-team planning and development of the CRADs. Team receives presentations from ID and LMITCO on the implementation progress since the ISMS Description was approved.

September 7 to September 24, 1999: Team performs the review and verification of ISMS implementation. Perform the review with interviews, observations, document reviews, evaluation, report writing and closeout of the ISMS Verification Phase II review.

ATR: September 7-17, 1999
RWMC/WERF and IRC/Big Shop: September 13-24, 1999

APPENDICES

Appendix I

Team Member Biographies

Team Assignments

Team Leader	Joe Arango
Senior Advisor	Wayne Rickman

Coordinator	Julie Sellars
Technical Editor	Lonnie Martinell
Classification Reviewer	Joel Trent
ATR	Terry Smith Larry Miller Ed Ziemianski Bob Baeder Richard Dickson Nancy Hammond
RWMC/WERF	Marty Letourneau Richard Dickson Carey Warren Glenn Morton Chuck Ljungberg
IRC/Big Shop	Dick Englehart Tom McDermott Keith Lockie Mike Hicks Jihad Aljayoushi

Team Biographies

Jihad Aljayoushi has over eight years of experience in the Department of Energy, Idaho Operations Office. He is currently serving as a Business Development Specialist responsible for Strategic Planning, Long Range Planning, and new business opportunities for the INEEL. Mr. Aljayoushi has seven years of experience dealing with Environmental Management issues. He was the project and control manager for the Mixed Waste Focus Area (MWFA) responsible for managing scope, schedule, budget, and procurement for numerous technology development projects throughout the DOE complex and the private sector. Prior to his work with the MWFA he managed the National Low Level Waste Management Program providing technical support to states concerning the management and disposal of low level radioactive waste. He also worked as a facility represenative for the INEEL Hot Laundry, Site Environmental Monitoring and the INEEL Sanitary Landfill and worked as executive assistant to the environmental restoration and waste management assistant manager. His review experience includes serving on teams that reviewed root cause analysis, conduct of operations, fundamentals of DOE operations, management and disposal of radioactive waste, unreviewed safety questions, safety analysis, and operational readiness. Mr. Aljayoushi holds a B.S. in Electrical Engineering from Texas A&M University. He was a member of the INEEL Phase I Verification Team.

Joseph Arango (Team Leader) has ten years of experience in various engineering disciplines supporting the development and implementation of program plans for the Department of Energy and the Department of Defense. He holds a Masters degree in Industrial and Systems Engineering from Virginia Tech and a B.S. in Mathematics from the U.S. Naval Academy. Since 1995, Mr. Arango has worked in the Office of the Departmental Representative to the Defense Nuclear Facilities Safety Board on a variety of safety issues identified by the Board including integrated safety management. From 1988 to 1995, as an Acquisition and Engineering Manager in private industry, he provided program management and engineering support for a Navy combat system design and development contract. Prior to 1988, he gained seven years of experience in the Navy nuclear power program and qualified in submarines and as a Nuclear Engineering Officer. He participated in Integrated Safety Management System Phase I and II Verifications at Rocky Flats and at the Oak Ridge Y-12 Plant, as well as a preliminary Phase I Verification at Lawrence Livermore National Laboratory's Building 332. He was the INEEL Phase I Verification Team Leader.

Robert Baeder is a Senior Nuclear Engineer and the Director of Energy Services with XL Associates, Inc. supporting the Department of Energy (DOE) for Defense Programs (DP) and Environmental Management (EM). He has a B.S. in Naval Engineering from the United States Naval Academy, and Masters Degrees in Naval Architecture and Marine Engineering from the Massachusetts Institute of Technology. He is pursuing his Ph.D. in Management. Mr. Baeder has more than 24 years of naval experience as a nuclear submarine officer, earning qualification as Engineer and for Command. His experience in the Navy Nuclear Power Program includes tours as the Engineer Officer for a submarine completing overhaul, and as the Executive Office during a reactor refueling submarine overhaul. Additionally, he served as the Associate and Acting Chairman of Mechanical Engineering at the United States Naval Academy and taught thermodynamics, fluid mechanics, and nuclear engineering. He also served for the Chief of Naval Operations in Program Management for the Navy's Ashore and Afloat Command, Control and Communications Systems (C3). As a result of his significant military experience in

nuclear power and his solid academic background, Mr. Baeder brings extensive expertise in nuclear and reactor plant operations and management, nuclear and thermodynamic/fluid mechanics engineering, maintenance and material management, training and education and engineering design. Mr. Baeder retired from the Navy in September 1994 and immediately joined XL Associates, Inc. Since then, he has gained more than four years of direct experience in DOE operations, serving for the DOE support in Operational Readiness Reviews (ORRs), Readiness Assessments (RAs), Standards and Requirements Implementation, Performance Assessments and Self-Assessment, implementation and training for DOE Defense Program Core Technical Group, in DOE DP programs in response to Defense Nuclear Facility Safety Board recommendations, and most recently in the DOE Integrated Safety Management System (ISMS) implementation and Verification (ISMSV). In these capacities he has also served on, or is now preparing for, more than twenty-five major ORRs/RAs and Assessments including: the Savannah River Site (SRS) Replacement Tritium Facility Validation and Verification, the SRS In-Tank Precipitation, the Oak Ridge Y-12 Receipt, Storage, and Shipment Restart Readiness Assessment, the SRS F-Canyon Phase II Restart ORR, the SRS Defense Waste Processing Facility ORR, the Oak Ridge K-25 Deposit Removal Project ORR, the SRS Consolidated Incineration Facility ORR, the Rocky Flats Building 371 ORR, the SRS H-Canyon ORR, the SRS ISMS Verification, the SRS HB-Line ORR, the Oak Ridge Y-12 RSS and DAS ORRs, the Nevada Test Site Combined Device Assembly Facility ORR, the SRS HB Line ORR, the EUO Phase A1 and A2 ORRs, the Pantex Building 12-116 ORR, the Y-12 Plant ISMSV, the Hanford W-320 Tank Sluicing Project ORR, the Hanford Plutonium Finishing Plant (PFP) ORR, and he is now serving on the Idaho National Engineering and Environmental Laboratory (INEEL) ISMSV. Usually, he has evaluated the areas of Operations, Procedures, or Management, but he has also reviewed Configuration Management, DOE Federal Management, Engineering Support, Maintenance, Quality Assurance, Safety, Safety Envelope, Qualification and Training, and Waste Management He has also assisted facilities in their preparation for operations including at the Oak Ridge National Laboratory (ORNL) site. Currently, Mr. Baeder is also one of the senior Mentors for the Lawrence Livermore National Laboratory (LLNL) Building 332 Resumption and ISMS Implementation Efforts. He is preparing for additional ORRs/RAs and ISMS/ISMSV tasking. He was a member of the INEEL Phase I Verification Team.

Richard Dickson is a Certified Health Physicist with 23 years of experience at the Department of Energy in Idaho. He earned a Bachelor of Science Degree in Physics from the University of Southern Colorado in 1974, and a Master of Science Degree in Radiation Protection and Radioecology from the School of Veterinary Medicine at Colorado State University in 1975. From 1975 through 1985, he worked as a health physicist at the Radiological and Environmental Sciences Laboratory. In this capacity he assisted with the monitoring and evaluation of radiological and non-radiological effluents released to the environment by facilities at the Idaho National Environmental and Engineering Laboratory (INEEL), prepared assessments of internal and external doses to occupational workers, and co-authored three journal articles on radioecology. In 1985, Mr. Dickson transferred to the Occupational Safety Division and became responsible for assessment and oversight of occupational radiation protection programs at nuclear facilities at the INEEL, West Valley Project Office in New York and the Grand Junction Project Office in Colorado. From 1988 through 1991, Mr. Dickson was a member of the Idaho National Engineering Laboratory Historical Dose Evaluation Task Group. The Task Group prepared *the Idaho National Engineering Laboratory Historical Dose Evaluation* report that compiled, documented and evaluated radiation doses as a result of radiological effluents from routine operations, tests, experiments, and accidents from 1952 through 1989. In January of 1997, Mr. Dickson received the Secretary's Gold Award for participation on the

Human Radiation Experiments Team. This team identified and made records of human radiation experiments conducted by the department available to the public. During the last 3 years, Mr. Dickson has taken a leadership role in the conduct of Environment, Safety, Health and Quality Assurance (ESH&QA) management systems assessments at the INEEL. These included assessments of the effectiveness of the ESH&QA oversight program, work control program, safety authorization basis, and PAAA Act Implementation. Mr. Dickson is presently serving as the Acting Director of the Policy and Assurance Division. Mr. Dickson completed the DOE Technical Qualification Program in the functional area of radiation protection in 1998. He completed an NQA-1 Lead Auditor Training Course in 1997 and an ISO 14000 Advanced Environmental Management Systems Auditors Course in 1998. He was a member of the INEEL Phase I Verification Team.

Richard Englehart is a nuclear engineer in the Office of Nuclear Safety Policy and Standards (EH-31). Dr. Englehart has over 20 years experience in the commercial nuclear industry and support to DOE in the areas of nuclear safety and radiological environmental studies, and eight years experience at DOE. At DOE, he was Director, Office of Environment for the New Production Reactor program in 1990 through 1992, and in his present position has staff responsibility for the Nuclear Safety Analysis Report Order (DOE O 5480.23), the Technical Safety Requirements Order (DOE 5480.22), the Unreviewed Safety Questions Order (DOE O 5480.21), and the nuclear and explosives safety design criteria section of the Facility Safety Order (DOE 420.1, section 4.1).

Dr. Englehart has a B.S. in mechanical engineering from Carnegie Mellon University and a M.S. and Ph.D. in nuclear engineering from The Pennsylvania State University. He was an assistant professor of nuclear engineering and was in charge of the University Research Reactor operations at the University of Florida from 1969 through 1972. He joined NUS Corporation in 1973 and was Manager of the Radiological Programs Department, and Assistant Manager of the Environmental Services Division. At NUS Dr. Englehart provided consulting, safety, environmental, and licensing support to the commercial nuclear sector and safety and environmental support to DOEs Radioisotope Thermoelectric Generator program, including risk analyses and launch support for NASA and DoD space missions from 1976 through 1990. During his tenure at NUS, he spent a year at the company's South Carolina office, managing support to DOE in the areas of nuclear and occupational safety.

Dr. Englehart has participated in the combined Phase I and Phase II ISMS verifications at Y-12, the Pantex Phase I and Phase II verification, and a preliminary ISMS verification at LLNL for the B232 Plutonium Facility, all in the area of Hazards. He was a member of the INEEL Phase I Verification Team.

Nancy Hammond is an industrial hygienist in the Office of Worker Health and Safety's Integrated Safety Management Team (EH-52). Nancy earned a B.A. in biology from Kutztown State University, completed graduate studies at the University of Washington in industrial hygiene and safety, and is a Registered Environmental Manager (REM). For ten years in the aerospace industry she provided integration, system safety and operations support to NASA and the Air Force including Design, Operational Readiness, Phase Safety and Flight Readiness Reviews. Nancy administered occupational safety and industrial hygiene programs for corporate organizations and for Pacific Northwest National Laboratories, where she served as the Chemical Hygiene Officer for four years.

Beginning in 1994 Nancy advised and mentored DOE contractors on meeting requirements for the Department's Voluntary Protection Program (DOE-VPP) that recognizes excellence in safety and health management systems. She has participated in three OSHA VPP onsite evaluation teams and three DOE-VPP teams, including back-up Team Leader. Joining EH's ISM team in 1997, Nancy works on ISM policies and field support. She was a member of Weldon Spring's combined Phase I and II ISM Verification Team.

Michael D. Hicks is the Facility Representative for the Specific Manufacturing Capabilities (SMC) Project in the Office of Program Execution for the Idaho Operations Office, Department of Energy. He has a B. S. Degree in Electrical Engineering and an A. S. Degree in Engineering Science. Mr. Hicks has been with the Idaho Operations Office for 8 years and has served as the Facility Representative for the SMC Project and the Program Manager for the Advanced Test Reactor Experiments Program. He has participated in numerous conduct of operations reviews, operational readiness reviews, and safety analysis report reviews.

Previous to his employment for DOE Mr. Hicks worked as a Senior Nuclear Engineer for ABB Combustion Engineering performing detailed analysis of reactor responses to losses of control and indication power on vital busses for the Baltimore Gas & Electric Co.'s Calvert Cliffs Nuclear Power Plant. Mr. Hicks also worked as a Senior Start-Up Test Engineer for EBASCO Plant Services performing and coordinating start-up testing for the Westinghouse Savannah River Co.'s P-Area Production Reactor. Mr. Hicks has also worked as a Senior Electrical Engineer for Newport News Reactor Services preparing, issuing, and performing inactivation procedures for electrical distribution, instrumentation, and control systems for the decommissioning of the Naval Reactors Facility's S1W Prototype.

Mr. Hicks also worked as a Shift Test Engineer, Electrical Field Engineer, and Electrical Design Engineer for Knolls Atomic Power Laboratory/General Electric Co. performing testing, construction, and design of Engineered Safeguard Systems for the D1G, S3G, and S1C prototypes.

Mr. Hicks has also worked as an Electrical Engineer for Raytheon Co. performing analysis and design of test philosophy for fault isolation of electronic radar devices for the USAF B1-B aircraft.

Martin Letourneau is a senior Environmental Protection Specialist and is the DOE Headquarters Low-Level Waste Program Manager within the Office of Environmental Management's Office of Waste Management. Mr. Letourneau has 13 years experience in the waste management and environmental field. He has been with the Department of Energy for 8 years, and is currently Implementation Manager for DOE's response to DNFSB Recommendation 94-2, and is Team Leader for the effort to revise DOE's radioactive waste management Order. Recently, Mr. Letourneau was Team Leader for development of DOE's Low-Level Radioactive Waste Disposal Facility Federal Review Group Assessment Manual, and in a prior assignment, served on DOE's Federal Facility Compliance Act Task Force.

Prior to joining DOE, Mr, Letourneau participated in Tiger Teams at Sandia, Livermore, and Oak Ridge (X-10), and environmental assessments at Bonneville Power Administration and Southwest Power Administration. He also participated in self assessment training of personnel at Sandia, Albuquerque and Los Alamos; conducted numerous due-diligence, compliance, Phase I, and Phase II environmental assessments for private sector clients; conducted regulatory impact analyses of RCRA regulations; and supported the U.S. EPA development of RCRA and CERCLA guidance.

Mr. Letourneau has a B.A. in Economics from Willamette University in Salem, Oregon and a Masters Degree in Environmental and Natural Resource Public Policy from the Kennedy School of Government at Harvard University. He was a member of the INEEL Phase I Verification Team.

Chuck Ljungberg is a Senior Environmental Scientist with the DOE Idaho Operations Office Environmental Programs and Settlement Agreement organization. He holds a B.S. in Environmental Science from the State University of New York College of Environmental Science and Forestry. He has 22 years of professional environmental experience and has been employed with the DOE for the past 11 years. He currently functions as the ID Environmental Management Systems (EMS) subject matter expert, and oversees development and implementation of the INEEL EMS and the effort to secure registration to the ISO14001 EMS voluntary consensus standard. Mr. Ljungberg is also the INEEL Pollution Prevention Program coordinator. He formerly held the positions of Chief, Environmental Compliance Branch, Deputy Director and Director Environmental and Quality Assurance Division at DOE Idaho, and Environmental Program Manager at the DOE West Valley Demonstration Project. He sits on the DOE EMS Topical and Steering committees. He has extensive environmental and management systems oversight experience. Mr Ljungberg is a Registered Environmental Manager, Certified Environmental Auditor, Certified Environmental Systems Manager, and is pursuing ISO14000 Lead Auditor credentials.

Mr. Ljungberg previously worked for the US EPA as an Enforcement Inspector with the Region 8 Air and Toxics Division; with Ecology and Environment's Field Investigation Team characterizing uncontrolled hazardous waste sites; the State of New York as a Fish and Wildlife Technician; and with the Carborundum Company as an Environmental Technician. He was a member of the INEEL Phase I Verification Team.

Keith Lockie currently manages the High Level Waste Program at the Department of Energy Idaho Operations Office. He holds a B.S. in Civil Engineering from the University of Idaho. Mr. Lockie spent five years working as a submarine reactor test engineer for the Navy at Mare Island Naval Shipyard in Vallejo, California. In 1986, he came to DOE-Idaho to work in the Nuclear Safety Oversight area. His work here included responsibilities to perform independent oversight of reactor safety, criticality safety, safety analysis development, fire protection, transportation safety, maintenance programs, work controls, and management systems. He has held positions at DOE-Idaho as Chief of the Nuclear Safety Branch and Acting Director of the Safety Division. This added responsibilities for independent oversight in radiation protection, industrial hygiene, industrial safety, emergency preparedness, and quality assurance. In 1997, Mr. Lockie transferred to his current position in the High Level Waste Program at DOE-Idaho. He was a member of the INEEL Phase I Verification Team.

Tom McDermott has over fourteen years of work experience and is currently responsible for providing technical advice, support and assistance on OSHA, and industrial hygiene issues to the DOE Chicago Operations Office (DOE-CH) Manager as well as facility groups and contractors and other DOE organizations as requested. He holds a B.S. in Comparative Physiology and an M.S. in Environmental Science from the University of Wisconsin Green Bay. Mr. McDermott serves as the DOE-CH ES&H Management Plan Coordinator, and was an original working group member chartered by Admiral Watkins with the development of a risk-based prioritization process for identifying, documenting, and allocating resources to ES&H needs and issues; he is responsible for ensuring that the ES&H Management Plan is used by facility group management and contractor management for prioritizing, aligning budgets, and allocating resources to contractor and laboratory ES&H and infrastructure needs and activities. He advises senior management from DOE-CH and the Office of Science on the technical merits of risk-based prioritization methodologies and risk management systems applications in an operating environment.

Mr. McDermott's other duties are to support the facility groups and contractors in the development and implementation of occupational safety and health (OSH) processes and procedures; conduct technical assessments of contractor's OSH, occupational medicine, and industrial hygiene programs. He is currently involved in Integrated Safety Management assessments of facility management groups management systems for compliance with the principles and functions of ISM. His review experience includes serving on teams that reviewed the Brookhaven Facility Group (BHG), the Ames Group, the Fermi group, and the joint DOE and Laboratory review of Ames Laboratory. He is also involved in developing DOE-CH wide procedures for *Issue Management* and *ES&H Planning, Prioritization, Resource Allocation, and Execution*. Additional duties have included developing and implementing systems at Brookhaven National Laboratory, BHG, ER, and DOE-CH as part of the HQ BNL Corrective Action Plan to address the concerns cited in the EH ISM report. He is currently a member of the Department's Response Team to Board recommendation 98-1. He was a member of the INEEL Phase I Verification Team.

Lawrence E. Miller has over eight years experience at the Department of Energy as a nuclear engineer within the Office of Nuclear Facilities Management (NE-40) within the Office of Nuclear Energy, Science and Technology (NE). Since joining the Department, he has served as the Headquarters Program Manager for the Advanced Test Reactor and the Idaho Test Reactor Area. He graduated from Duke University in 1965 with a Bachelor of Science Degree in Math and Physics. He entered the Navy Nuclear Power Program upon graduation, and served 26

years as an officer in the U.S. Navy nuclear propulsion and nuclear weapons programs. During his Navy Career, he received a total of over three years of formal courses of instruction in nuclear and general power plant engineering at the post-graduate level. While in the Navy, he gained extensive experience in the areas of: conduct of operations, maintenance and training associated with nuclear power plants; nuclear waste management; radiation health; nuclear disaster control; nuclear weapons design, maintenance, security and delivery systems; and nuclear weapons command and control. He served in various assignments on five nuclear submarines including as Commanding Officer of the nuclear fleet ballistic missile submarine USS JAMES MADISON SSBN 627 Gold. Prior to command, he served two shore assignments. The first was on the staff of the S1W Navy nuclear power prototype plant in Idaho as an instructor and later as the Maintenance Officer, and the second was as Academic Director at a major Navy training command managing over 100 technical courses of instruction for Navy nuclear submarine personnel. After command, he served as Assistant Chief of Staff for Operations for Commander Submarine Group SIX. He completed his Navy career at the Pentagon as officer in charge of strategic nuclear submarine command and control analysis and assessment. Upon retirement from the Navy in 1991, he joined the Department, and, in addition to his primary assignment noted above, he routinely performs special assignments involving conduct of operations management at other DOE test and research reactors under NE. Significant collateral duties while at DOE include being the NE representative on the Department's Radiological Control Coordinating Committee and the Code of Federal Regulations Nuclear Safety Rule Implementation Steering Group. He also serves as the NE point of contact on Defense Nuclear Facilities Safety Board matters. In this capacity, he served as the NE representative on the Department wide team that drafted the Implementation Plan for Board Recommendation 95-2, and has since served as the NE point of contact on Integrated Safety Management System implementation issues.

Glenn Morton, P.E., is a Fire Protection Engineer with the Department of Energy Savannah River Site (DOE-SR) in the Safety Division. He holds a B.S. in Mechanical Engineering from the University of Tennessee and has completed graduate studies in Industrial Hygiene (IH) from the University of South Carolina and similar courses in IH from the Medical University of South Carolina. He has 12 years of experience in the fire protection and safety field, and is a registered Professional Engineer in Fire Protection. Mr. Morton spent the first 2 years of his career with the Tennessee Valley Authority (TVA) where he served as a fire protection engineer during the restart of Sequoyah Nuclear Plant, Units 1 and 2, after TVA had shut down its nuclear program due to safety concerns. His assignments included 10CFR50.59 Safety Evaluations, 10CFR50 Appendix R reviews and design of fire protection systems. Mr. Morton left TVA in 1989 to take a position as a fire protection engineer with Chas T. Main, Inc., a private A&E firm. His assignments included Fire Hazards Analysis and design of fire protection systems for New York Power Authority and DOE Savannah River Operations Office. In 1991 he assumed a position with DOE, where he provided technical support for fire protection to the DOE Waste Operations and Technical Support Division. Currently he is providing technical oversight for fire protection, safety, and industrial hygiene to the Assistant Manager for Health Safety and Technical Support. He is matrix to the DOE-SR line organizations, Assistant Manager for High Level Waste and Assistant Manager for National Security where his duties include technical oversight in the areas of safety and health. Mr. Morton served on the DOE-SR Operational Readiness Evaluations for FB-Line, E-Area Burial Vaults, and H-Canyon. He has also served as a team member of the DOE-SR Startup Validations Assessments for the In-Tank-Precipitation and Defense Waste Processing Facility. He performed the industrial safety and hygiene review for the Integrated Safety Management System (ISMS) Phase II Assessment

of FB-Line and more recently the safety and health portions of the Hanford, Tank Waste Remediation System (TWRS) ISMS Phase I verification. He has performed the safety and health portions of the Operational Readiness Reviews (ORR) for Savannah River Site H-Canyon, HB-Line, and Tritium Facilities and on the ORR for the Waste Isolation Pilot Project (WIPP). He was a member of the INEEL Phase I Verification Team.

Wayne Rickman is presently employed as a Principal Analyst and Senior Vice President of Nuclear Operations for Sonalysts, Inc. He has had more than 30 years of operational experience in the Naval Nuclear Propulsion (submarine) Program, achieving the rank of Rear Admiral (RADM).

Mr. Rickman in his current assignment has supported the Department of Energy (DOE) in the areas of Training and Qualification and Operational Readiness Reviews (ORRs). He recently served as a Senior Advisor to a select DOE Training and Qualification survey team in support of the Implementation Plan for Defense Nuclear Facilities Safety Board (DNFSB) Recommendations 92-7 and 93-3. Mr. Rickman has served as senior nuclear advisor for the ORRs for Building 707 at Rocky Flats, F-Canyon, FB-Line, Defense Waste Processing Facility, H-Canyon, and the Replacement Tritium Facility at Savannah River Site (SRS). Additionally, her served as a Senior Nuclear Advisor as well as a training and qualification technical expert for HB-Line at SRS. During the ORR for Building 559 at Rocky Flats, Mr. Rickman participated as the training and management systems group leader. He was involved in the internal briefings within DOE and to the DNFSB and participated in the many public hearings concerning ORRs for those facilities. Additionally, Mr. Rickman was the technical director for the DOE certification program for K- Reactor operators as part of the K-Reactor Restart Program at SRS.

While in the Navy, RADM Rickman was involved in the training and qualification of personnel in the Naval Nuclear Propulsion and the Naval Nuclear Weapons Programs. He served as commanding officer of two submarines, including a Trident submarine with the Navy's largest and newest submerged power reactor and the Trident C-4 weapons system. In addition, Mr. Rickman served as a Deputy Commander for training for a submarine squadron, where he directed, monitored, and evaluated the training and qualification of submarine crews in operations of nuclear reactors and nuclear weapons. He also served as special assistant to the Director, Naval Nuclear Propulsion Program, where he was responsible for the selection, qualification, training, and assignment of personnel who supervise, operate, and maintain naval nuclear propulsion plants. Mr. Rickman's last assignment as a Rear Admiral was the Flag Officer responsible for training in the Atlantic fleet. He was responsible for 14 diverse training organizations with 2,000 instructors in more than 650 courses and a throughput of 175,000 students per year. He was the INEEL Phase I Verification Team Senior Advisor.

Terry Smith is the Director of Operational Safety Division in the Office of Program Execution for the Idaho Operation Office, Department of Energy. He has a B.S. Degree in Chemical Engineering and a M.S. Degree in Nuclear Science and Engineering. Mr. Smith has been with the Idaho Operations Office for nine years and has served as a Facility Representative and Facility Engineer at the Advanced Test Reactor and as the Technical Lead for Nuclear Safety. He has participated and led numerous operational readiness reviews, safety analysis report and technical surveillance requirements review, and managed various projects for DOE ID. He participates on the DOE Secretarial Officer Working Group on Safety Analysis and the INEEL Occupational Health and Safety Council. Mr. Smith is also a member of the Nuclear Reactor

Safety Committee for Idaho State University.

Previous to his employment for DOE he worked as the Manager of Isotope and Nuclear Chemistry Group 5 (INC-5), the Research Reactor Group, (Facility Manager, Operations, Manager, Maintenance Manager of the Omega West Reactor) Isotope and Nuclear Chemistry Division, Los Alamos National Laboratory. Mr. Smith also served on the Los Alamos National Laboratory Reactor Safety Committee. INC-5's mission was to provide Nuclear Reactor Physics support to the nuclear weapons program at Los Alamos National Laboratory. The major services included; isotope production; neutron activation analysis; neutron radiography; neutron spectroscopy; and filtered beams for radiation electron instrument calibrations.

Mr. Smith also served in the capacity of Radiation Safety Officer and Operations Manager for the Nuclear Reactor Laboratory at Idaho State University. As Safety Officer, he was responsible for ensuring that radioactive materials, hazardous chemicals and radiation producing machines were procured, used and disposed of in accordance with all NRC license conditions, state and Federal laws, and university policy. He developed the radiation protection program for ISU and provided standard calibrated dosimetry to users at ISU and standard calibrated radiation measuring instruments. He also taught graduate level courses on radiation detection and control. While at ISU he represented the State of Idaho on the Northwest Region Task Force for the disposal of low level radioactive waste.

Mr. Smith is a graduate of the United States Navy Nuclear Propulsion Program and served as a commissioned officer on board three nuclear powered submarines. He was a member of the INEEL Phase I Verification Team.

Carey Warren has over 20 years of experience in reactor plant operations and maintenance. As the DOE-Idaho Facility Representative at the Idaho Nuclear Technology and Engineering Center (INTEC) for the past two years, Mr. Warren is the primary point of contact for support plant operations, maintenance activities, and operational events. Prior to his assignment at INTEC, Mr. Warren served as the DOE-Idaho Facility Representative for the Test Reactor Area where he led a ground breaking environmental assessment team and performed routine oversight of Advanced Test Reactor operations. He has headed assessment teams for an INTEC Conduct of Operations assessment and a Licensing Readiness Review for Nuclear Regulatory Commission (NRC) licensing of the Three Mile Island Unit 2 Independent Spent Fuel Storage Installation (ISFSI). In addition, Mr. Warren served as team member for Conduct of Operations and Procedures in the Transition Readiness Review of Department and Contractor readiness to assume the Fort St. Vrain ISFSI NRC license.

Prior to joining DOE in 1994, Mr. Warren worked at Charleston Naval Shipyard for four years in the Nuclear Engineering Department as a mechanical engineer directing overhaul and repair of submarine reactor plants. Prior to that, Mr. Warren served as an U.S. naval officer for Mare Island Naval Shipyard managing short turnaround nuclear submarine repair activities as Ship Superintendent. As a naval officer, Mr. Warren qualified in reactor plant and submarine operations while serving aboard the USS Sea Devil, SSN-664.

Mr. Warren holds a Bachelor of Science degree in Mathematics from the University of North Carolina at Chapel Hill and a Master of Science degree in Nuclear Engineering from Penn State University. In addition, Mr. Warren is a licensed Professional Engineer (Mechanical).

Edward Ziemianski has over 28 years of experience in engineering, operations, and management in the nuclear power industry. As the DOE-Idaho Facility Director at the Idaho Nuclear Technology and Engineering Center (INTEC) for the past two years, Mr. Ziemianski is responsible for all activities associated with the treatment and storage of spent nuclear fuels and associated high-level waste streams at the Idaho National Engineering and Environmental Laboratory (INEEL). Prior to his assignment at INTEC, Mr. Ziemianski served as the DOE-Idaho Facility Director at the Test Reactor Area for four years and as the Director of the Technical Support Division for two years where he also led the Tiger Team Action Plan Project for the INEEL. He has headed two readiness review teams for the Department, one for the Argonne National Laboratory West (ANL-W) Fuel Conditioning Facility (FCF) operational readiness review and one for the Fort St. Vrain Independent Spent Fuel Storage Installation (ISFSI) licensing readiness review.

Prior to joining DOE in 1991, Mr. Ziemianski worked for the ABB Combustion Engineering family of companies for three years as an engineering and management consultant to several commercial nuclear utility companies in the northeastern United States. Prior to that, Mr. Ziemianski held various engineering and management positions during 11 years with the Nuclear Operations Department of the Boston Edison Company where he had responsibility for industrial safety, fire protection, radioactive waste disposal, regulatory compliance, configuration management, licensee event reporting, training and accreditation of nuclear training programs. He also served on the Nuclear Safety Review and Audit Committee for operations associated with the Pilgrim Nuclear Power Station.

Prior to joining Boston Edison in 1977, Mr. Ziemianski served in the engineering department for the Yankee Atomic Electric Company where he supported the design and licensing of the Seabrook Nuclear Power Station and served on an extended assignment at the Vermont Yankee Nuclear Power Station. Prior to joining Yankee Atomic in 1974, Mr. Ziemianski served as a Nuclear Shift Test Engineer for the Electric Boat Division of General Dynamics Corporation where he qualified on the S5W reactor plant and S5Wa steam and electric plant. He earned a Bachelor of Science degree in Mechanical Engineering from Clarkson University in 1971.

Appendix II

Criteria and Review Approach Document

Phase II ISMS Core Expectations

The following eight Core Expectations (CE) will be considered during the Phase II assessment of INEEL ISMS implementation. This set of CEs is based on the fact that the ID Manager has formally approved the ISMS Description. This acknowledges that contractor ISMS programs are satisfactory at the corporate or site level. Any comments that affect the adequacy of the safety management programs should be resolved and incorporated before the Phase II review occurs.

1. An integrated process has been established and is utilized to identify and prioritize specific mission discrete tasks, mission process operations, modifications and work items. (CE II-1)

2. The full spectrum of hazards associated with the Scope of Work is identified, analyzed, and categorized. Those individuals responsible for the analysis of the environmental, health and safety, and worker protection hazards are integrated with those personnel assigned to analyze the processes. (CE II-2)

3. An integrated process has been established and is utilized to develop controls that mitigate the identified hazards present within a facility or activity. The set of controls help ensure adequate protection of the public, worker, and the environment and are established as agreed upon by DOE. These mechanisms provide integration, which merge together at the workplace. (CE II-3)

4. An integrated process has been established and is utilized to effectively plan, authorize and execute the identified work for the facility or activity. Both workers and management demonstrate a commitment to ISMS. These mechanisms demonstrate effective integration. (CE II-4)

5. A process has been established and is utilized which ensures that mechanisms are in place which can ensure continuous improvements are implemented through an assessment and feedback process, which functions at each level of work and at every stage in the work process. (CE II-5)

6. Clear and unambiguous roles and responsibilities are defined and maintained at all levels within the facility or activity. Facility or activity line managers are responsible and accountable for safety. Facility or activity personnel are competent commensurate with their responsibility for safety. (CE II-6)

7. DOE ISMS procedures and mechanisms are established which can ensure that work is formally and appropriately authorized and performed safely. DOE line managers should be involved in the review of safety issues and concerns and should have an active role in authorizing and approving work and operations. (CE II-7)

8. DOE ISMS procedures and mechanisms are established which can ensure that hazards are analyzed, controls are developed, and that feedback and improvement programs are in place and effective. DOE line managers are using these processes effectively, consistent with FRAM and FRA requirements. (CE II-8)

Each CRAD objective includes a reference to the specific ISMS CE that it addresses. The referenced CE, as delineated in the ISMS Guide 450.4-1 and the ISMS Verification Team Leader's Handbook, is included in parenthesis after the statement of the objective.

DEPARTMENT OF ENERGY (DOE)

OBJECTIVE:

DOE.1 DOE procedures and mechanisms are established to help ensure that hazards are analyzed; controls are developed; work is formally and appropriately authorized and performed safely; and feedback and improvement programs are in place and effective. DOE line managers are using these processes effectively, consistent with FRAM and FRA requirements, and are involved in the review of safety issues and concerns and have an active role in authorizing and approving work and operations. (CE II-7, CE II-8)

CRITERIA:

28. DOE procedures and/or mechanisms are in place that establish a process for confirming readiness and authorizing operations.

29. DOE procedures and/or mechanisms are established to help ensure that the safety management system is properly implemented and line management oversight of the contractor's worker, public, environment, and facility protection programs is performed.

30. DOE procedures and/or mechanisms require day-to-day operational oversight of contractor activities through Facility Representatives.

31. DOE procedures and/or mechanisms are established to help ensure the implementation of quality assurance programs and ensure that contractors implement quality assurance programs.

32. DOE procedures and/or mechanisms are in place to help ensure that the contractor's hazard analysis covers the hazards associated with the work and is sufficient for selecting standards.

33. DOE procedures and/or mechanisms are in place in which DOE directs the contractor to propose facility or activity-specific standards tailored to the work and the hazards. DOE procedures require that appropriate safety requirements in necessary functional areas are included in contracts.

34. DOE procedures and/or mechanisms are in place that direct DOE line manager oversight to ensure that implementation of hazards mitigation programs and controls are established.

35. DOE procedures and/or mechanisms are in place that direct the preparation of the authorization basis documentation and oversee the implementation by the contractor. Procedures for development, review, approval, maintenance, and utilization of Authorization Agreements are implemented.

36. DOE procedures and/or mechanisms require that contractors develop a lessons-learned program and monitor its implementation. A process is established for reviewing occurrence reports and approving proposed corrective action reports. A DOE process is established and effectively implemented to continuously improve efficiency and quality of operations. Corrective actions are developed, implemented, and tracked in order to profit from prior experience and the lessons learned. DOE provides effective line oversight of the contractor's self-assessment programs.

APPROACH:

NOTE: In general, ID direction to the contractor to carry out DOE requirements is through List A and List B of contract DE-AC07-94ID13223, including associated contract modifications. Review of contract DE-AC07-94ID13223 should provide proof that ID has directed the contractor to implement many of the criteria stated above. Additionally, ID has written an ID ISMS Description Document, ID Guide 450.X-X, which explains the DOE-ID ISMS. Review of ID Guide 450.X-X should provide information on how ID implements its ISM system, and how ID activities integrate with those of LMITCO. The following Record Review section highlights specific ID Notices tailored to the criteria above.

Record Review: Review ID Notice 411.1, "DOE Integrated Safety Management Functions, Responsibilities and Authorities" to verify that line management is responsible for safety, and that their responsibility is clearly defined in roles and responsibilities. Review ID Notice 425.1, "Startup and Restart of Nuclear Facilities" to determine if a process for confirming readiness and authorizing operations is in place, and review documentation from a startup or restart review to determine the adequacy of implementation. Review ID Notice 450.A3,"Environment, Safety, Health and Quality Assurance Oversight" and ID Order 220.X, "Independent Assessment" and sample select surveillance reports to determine if mechanisms are established to help ensure line management performs oversight of the contractor's ISMS, (specifically including hazard mitigation programs and controls, and self-assessment programs) to verify protection of workers, public, and the environment. Review the Quarterly Oversight Schedule to determine if the oversight is balanced with risk and priority of mission. Review Facility Representative Position Descriptions and Performance Agreements to determine if mechanisms are in place to require day to day operational oversight by FRs. Review ID Order 414.1, "Quality Assurance Program" and individual ID AM organization Quality Program Plans (QPPs) to determine if they help ensure the implementation of quality assurance program by ID and LMITCO. Review ID Notice 420.A1, "Safety Basis Review and Approval Process" to determine if this mechanism directs the preparation of authorization basis documentation, helps ensure that the contractor's hazard analysis covers the hazards associated with the work, and is sufficient for directing the selection of standards tailored to the facility work and hazards. Review ID Notice 450.C, "Authorization Agreements" to determine if it is sufficient to direct the development, review, approval, maintenance and utilization of Authorization Agreements. Review facility Authorization Agreement(s) to determine if ID Notice 450.C was properly implemented. Review the approved and in process facility hazards analysis documentation to verify that contractor procedures and mechanisms have been properly reviewed and approved. Review ID Order 210.X, "DOE-ID Performance Measure, Trend Analysis, and Communications" to determine if this mechanism requires contractors to develop a lessons-learned program and monitor its implementation. Review ID Order 410.A, "DOE-ID Issue Management" to determine if ID has a process to ensure corrective actions are developed, implemented, and tracked. Review the

results of the implementation of ID Order 410.A to evaluate adequacy of implementation to continuously improve efficiency and quality of operations. Review ID O 220.X, "DOE-ID Self Assessment" to determine the adequacy of the ID management self-assessment program.

Interviews: Interview the Facility Director and Site Area Director and discuss work authorization and performance to determine if there are adequate mechanisms to ensure that work is properly authorized at all levels. Determine if worker safety is perceived as an integral part of the work authorization process and that workers are involved in issue resolution if appropriate. Interview DOE and Contractor Line Management personnel at all levels and discuss the oversight programs. Discuss the Facility Representative (FR) programs with facility representatives and contractor personnel to determine if the FR program is effective. Discuss oversight and assessment programs with DOE staff from the Facility, Operational Safety Division, Environmental Programs and Settlement Agreement Division, and the Performance Assurance Division who perform ES&H management and supervision assignments. During interviews, verify understanding of line management responsibility for safety and understanding of clear roles and responsibilities. Interview Facility Director, Facility Engineer(s), and Operational Safety Division Director to discuss the review and approval of the results of the contractor's identification, analysis, and categorization of hazards to assess their understanding of the procedures and the underlying principles and requirements. Interview Facility Director, Facility Engineer(s), and Operational Safety Division Director to discuss the review and approval of the standard selection process including the approval of the authorization protocols and agreements. Interview DOE personnel responsible for administering the issues management program and those DOE line managers who provide oversight of the contractor's self-assessment programs. Interview DOE-ID management personnel responsible for the DOE-ID management self-assessment program.

Observations: Observe selected facility representative and DOE staff oversight activities. Observe conformance to ID N 450.A3,"Environment, Safety, Health and Quality Assurance Oversight." Observe the review of Occurrence Reports by Facility Representatives to assess conformance to DOE Order 232.1, "Occurrence Reporting and Processing of Operations Information." Observe the weekly Facility Director Conference Call, Facility Director staff meetings, and interface with the contractor (e.g. performance monitor meetings) to determine line management understanding and awareness of operational activities.

HAZARD IDENTIFICATION AND STANDARD SELECTION (HAZ)

NOTE: The primary focus of this section of the review is the identification of hazards and development, review, and approval of Authorization Basis documentation at the facility level. Hazard identification and controls for individual work items or activities will be evaluated using the Operations CRAD.

OBJECTIVE:

HAZ.1 The full spectrum of hazards associated with the Scope of Work is identified, analyzed, and categorized. Those individuals responsible for the analysis of the environmental, health and safety, and worker protection hazards are integrated with personnel assigned to analyze the processes. An integrated process has been established and is utilized to develop controls that mitigate the identified hazards present within a facility or activity. The set of controls are used to ensure adequate protection of the public, worker, and the environment and are established as agreed upon by DOE. These mechanisms demonstrate integration, which merge together at the workplace. (CE II-2, CE II-3)

CRITERIA:

19. Procedures and/or mechanisms are in place and utilized by personnel to ensure hazards associated with the work throughout the facility have been identified and analyzed. The resulting documentation is defined, complete, and meets DOE expectations. The execution of these mechanisms ensure personnel responsible for the analysis of environmental, health and safety concerns are integrated with those assigned to analyze the hazards for the facility or activity. The use of these mechanisms ensure direction and approval from line management and integration of the requirements.

20. Procedures and/or mechanisms are in place and utilized by personnel that describe the interfaces, roles and responsibilities of those personnel who identify and analyze the hazards of the scope of work. Personnel assigned to accomplish those roles are competent to execute those responsibilities.

21. Procedures and/or mechanisms are in place to develop, review, approve and maintain current all elements of the facility Authorization Basis Documentation with an integrated workforce.

22. Procedures and/or mechanisms that identify and implement appropriate controls for hazards mitigation within the facility or activity are developed and utilized by workers and approved by line managers. These procedures/mechanisms reflect the set of safety requirements agreed to by DOE.

23. Standards and requirements are appropriately tailored to the hazards.

24. Procedures and/or mechanisms are in place to develop, maintain, and utilize Authorization Agreements.

25. Procedures and/or mechanisms are in place to effectively and accurately implement all aspects of the Authorization Basis.

APPROACH:

Record Review: Review the documents that govern the conduct, review, and approval of facility hazard analysis such as Technical Safety Requirements MCP-2450 "Technical Safety Requirements", Fire Hazards Analysis (FHA) MCP-579 "Fire Hazards Analysis", Criticality Safety Evaluation (CSE) PRD-112 "Criticality Safety Program Requirements", Safety Analysis PDD-22 "Safety Analysis" and PRD-164 "Safety Analysis for Non-Nuclear, Radiological, and Other Industrial Facilities", and MCP-3680 "Environmental Aspect Evaluation and Maintenance" (EAE) to verify that these documents conform to the hazard analysis requirements. Review a sample of hazard control documents to verify safety controls are provided for the hazards identified and that the control strategy encompasses a hierarchy of 1) hazard elimination, 2) engineering controls, 3) administrative controls, and 4) personnel protective equipment. Typical documents include Preliminary Hazards Review (PHR), Preliminary Safety Analysis (PSAR), Safety Analysis Reports (SARs), Technical Safety Requirements (TSRs), Health and Safety Plans (HASPs), Auditable Safety Analysis (ASA), Fire Hazards Analysis (FHA), Criticality Safety Evaluation (CSE), etc. Review procedures and perform field verification for activities/processes such as STD-101 "Integrated Work Control Process," Radiological Work Permits (MCP-7 "Radiological Work Permit"), operations procedures (such as MCP-3480 "Environmental Instructions for Facilities, Processes, Materials, and Equipment), Hazards Identification and Control documents (MCP-3562 "Hazards Identification and Control of Operational Activities" or MCP-3571 "Independent Hazard Review") to ensure accurate and effective implementation of Authorization Basis documentation requirements. For nuclear facilities, the respective Authorization Agreement describes facility management processes and procedures required for safe operation of the facility. The Unreviewed Safety Question process, described in MCP-123, "Unreviewed Safety Questions," is used to ensure activities remain within the facility safety envelope. Where appropriate, review the process used to resolve Unreviewed Safety Questions (USQs) to ensure new tasks are being evaluated against the approved authorization basis as required by MCP-123, "Unreviewed Safety Questions." Review completed or in progress implementation documentation.

Interviews: Interview personnel responsible for the identification and analysis of work hazards including personnel responsible for ALARA review requirements. In nuclear facilities, for example, this should include personnel responsible for USQ determination, procedure technical reviews, etc. Interview personnel responsible for developing and implementing hazard controls and/or Authorization Basis Documentation at the facility level. This should include personnel such as those responsible for SAR/TSR, FHA, CSE, and EAE preparations and implementation.

Observations: If possible, observe the actual preparation and field implementation of the analysis of hazards. In nuclear facilities, this should include an Unreviewed Safety Question Determination (USQD), preparation of a JHA, SAR/TSR, or Criticality Safety Evaluation, etc. Observe the actual processes development, review, approval, and implementation of SAR/TSR,

AA, and other Authorization Basis Documents as available. Where appropriate, observe that new tasks are being evaluated to determine if the tasks fall within the safety envelope described in the approved authorization basis as required by MCP-123, “Unreviewed Safety Questions.”

MANAGEMENT (MG)

OBJECTIVE:

MG.1 An integrated process has been established and is utilized to identify and prioritize specific mission discrete tasks, mission process operations, modifications and work items. An integrated process has been established that ensures that mechanisms are in place to ensure continuous improvements are implemented through an assessment and feedback process, which functions at each level of work and at every stage in the work process. (CE II-1, CE II-5)

CRITERIA:

22. Procedures and/or mechanisms that require line management to identify and prioritize mission-related tasks and processes, modifications, and work items are in place and utilized by personnel.

23. Procedures and/or mechanisms are in place and utilized by personnel to ensure identified work (i.e., mission-related tasks and process, processes or facility modification, maintenance work, etc.) can be accomplished within the standards and requirements identified for the facility.

24. Procedures and/or mechanisms are in place and utilized by personnel to collect feedback information such as self-assessment, monitoring against performance objectives, occurrence reporting, and routine observation. Personnel assigned these roles are competent to execute these responsibilities.

25. Procedures are in place that develop feedback and improvement information opportunities at the site and facility levels as well as the individual maintenance or activity level. The information that is developed at the individual maintenance or activity level is utilized to provide feedback and improvement during future similar or related activities.

26. Procedures and/or mechanisms are in place and utilized by managers to identify improvement opportunities. Evaluation and analysis mechanisms should include processes for translating operational information into improvement processes and appropriate lessons learned.

27. Procedures and/or mechanisms are in place and utilized by managers to consider and resolve recommendations for improvement, including worker suggestions.

28. Procedures and/or mechanisms are in place, which include a process for oversight that ensures that regulatory compliance is maintained.

APPROACH:

Record Review: Review the facility or activity long-range planning documentation. This should include such items as: summary schedules, plan of the week schedules, long-range maintenance schedules, modification schedules, etc.

Review the procedures and mechanisms that line managers utilize to identify and prioritize mission-related tasks and processes, modifications, and work items. All direct funded work is controlled by procedures found in MCP-14, "Graded Approach to Defining Project Controls." Three key facility and activity level procedures mentioned in MCP-14 that are used to specify the detailed requirements of this graded approach are MCP-23, "Planning and Managing Projects with Grade I Cost and Schedule Controls," MCP-3543, "Planning and Managing Projects with Grade II Cost and Schedule Controls" and MCP-3544, "Planning and Managing Projects with Grade III Cost and Schedule Controls." Appendix B of MCP-14 defines Grade I, II and III projects. Indirect funded work is controlled by the process described in MCP-2668, "Financial Planning, Administration and Control of Indirect Activities/Work." Project Management for construction work also follows guidelines provided in GDE-51, "INEEL Guide for Project Management." Projects funded by the EM Program must meet additional but integrated project development and management requirements described in MCP-3416, "Environmental Management Program Baseline Development, Management and Reporting."

Review the procedures and/or mechanisms that are utilized by the facility or activity to ensure that identified work is accomplished in accordance with established standards and requirements. Standards and requirements are rolled down to the facility level for implementation utilizing the process described in MCP-2447, "Requirements Management." Review facility processes for ensuring standards and requirements promulgated by the MCP-2447 process are reflected in activities at the facility.

Review the performance monitoring documentation for the feedback and continuous improvement process. This should include such documents as occurrence reports, deficiency reports, results of post-job reviews, safety observer reports, Issue Communication and Resolution Environment (ICARE) reports and reports of self-assessments and independent assessments. Ensure occurrence reports and ICARE entries are being completed in accordance with the requirements specified in MCP-190, "Event Investigation and Occurrence Reporting" and MCP-2723, "Reporting and Resolving Employee Safety Concerns & Suggestions," respectively. Process deficiencies should be addressed by following the process described in MCP-598, "Process Deficiency Resolution." Lessons learned are managed and processed in accordance with the requirements described in MCP-192, "Lessons Learned Program." Management self-assessments are conducted in accordance with MCP-8, "LMITCO Self-Assessment Process for Continuous Improvement." The process of independent assessment of facilities and activities is described in MCP-552, "Conduct of Independent Oversight Assessments." The FY-99 schedule of independent oversight assessment activities can be found on the QA and Conduct of Operations internal homepage at URL: http://home.inel.gov/qa&coo/ipa.html. The Facility Excellence Program, described in PDD-1011, is a structured means of regularly assessing facilities for compliance in any of these areas.

Review procedures for work control to determine that adequate feedback and improvement mechanisms are in place at the individual maintenance or activity level. MCP-3003, “Performing Pre-Job Briefings and Post-Job Reviews,” is the activity-level requirements document for this process.

Review actual data from these processes to evaluate the effectiveness of the implementation of these mechanisms.

Interviews: Interview management personnel responsible for the identification and prioritization of work. This should include personnel such as those responsible for long-range planning documentation, schedule preparation, etc. Interview personnel responsible for administering the feedback and continuous improvement process. This should include personnel such as those responsible for occurrence reporting, lessons learned preparation, preparation, ICARE entries, self-assessment, and oversight. Interview personnel responsible for capturing and utilizing feedback and improvement information during individual maintenance or other work activities. Interview the facility ICARE representative. Interview line management to determine level of knowledge and involvement in the ICARE process.

Observations: Observe work definition and planning activities to ensure that requirements specified by the Requirements Management process (MCP-2447) are considered and implemented at the activity level. If possible, observe an Operational Safety Board (OSB) meeting and a Facility Operation Review and Implementation Board (FORIB) meeting. If possible, observe a program or project Change Control Board meeting. Observe a Post-Job Review. Observe any critiques which may arise throughout the course of the observation process.

OBJECTIVE:

MG.2 Clear and unambiguous roles and responsibilities are defined and maintained at all levels within the facility or activity. Managers at all levels demonstrate a commitment to ISMS through policies, procedures, and their participation in the process. Facility or activity line managers are responsible and accountable for safety. Facility or activity personnel are competent commensurate with their responsibility for safety. (CE II-6)

CRITERIA:

11. Procedures and/or mechanisms are in place and utilized by personnel that define the roles and responsibilities for the identification and prioritization of mission-related tasks and processes, facility or process modification, and other related work items.

12. Procedures and/or mechanisms are in place that define clear roles and responsibilities within the facility or activity to ensure that safety is maintained at all levels.

13. Facility or activity procedures specify that line management is responsible for safety.

14. Procedures and/or mechanisms are in place and utilized to ensure that personnel who supervise work have competence commensurate with their responsibilities.

15. Procedures and/or mechanisms are in place and utilized to ensure that personnel performing work are competent to safely perform their work assignments.

APPROACH:

Record Review: Review organizational documentation such as MCP-1752 "RWMC Facilities Responsibilities," PDD-1015 "AEDL Research Laboratory Operations," "Idaho Falls Facilities Tenants' Manual," MCP-3640 "Central Facilities Area Operations Information Roles And Responsibilities" and other similar documents for TRA and WERF to determine the personnel positions with responsibility associated with this objective. Ensure roles and responsibilities for personnel responsible for safety are clearly defined and understood and properly executed. Review should include position descriptions, Form-325.01 "Employee Position Description" and other applicable MCPs that describe roles and responsibilities related to ensuring safety are maintained. The review should consider personnel in line management and staff positions and should evaluate whether line managers are responsible for safety. Review the procedures established such as PDD-13 "Training and Qualification Program," MCP-27 "Preparation and Administration of Individual Training Plans," and MCP-33 "Training Qualification and Certification" to ensure that managers and workers are competent to safely perform work. Review the personnel records which should include the "Training and Implementation Matrix" (TIM), "Individual Training Plans" and "Employee Training History," to identify the individual qualifications that meet the elements of the position descriptions. Review the applicable records of qualification and certification. Review any training or qualification material, including

training and qualification manuals such as Manual 12 and the associated “yellow sheets” that support gaining or verifying competence to fill the positions.

Interviews: Interview selected personnel at all levels of facility or activity management who are identified by the record review above. Verify their understanding and commitment to ensuring that safety is maintained for all work at the facility or activity. Interview a selected number of supervisors and workers to determine their understanding of competency requirements and their commitment to performing work safely.

Observations: Observe training being delivered for key program such as hazards identification and analysis. Observe scheduled activities that demonstrate that clear roles and responsibilities are established and understood, that line managers are actively involved with decisions affecting safety, and that managers and workers are competent to perform their duties. Activities such as weekly planning meetings, plans of the day, event critiques, safety training, OSB meetings, Pre-job briefs, Site Operations Council (SOC) meetings, Corrective Action Review Boards (CARBS) and safety meetings are typical events that may provide good examples of the safety training and decision making process. Activities such as facility/process operations, testing, and maintenance will provide opportunities to observe personnel in the execution of roles and responsibilities, their understanding of procedures, awareness of hazards and management commitment to safety.

OPERATIONS (OP)

OBJECTIVE:

OP.1 An integrated process has been established and is utilized to effectively plan, authorize and execute the identified work for the facility or activity. (CE II-4)

CRITERIA:

16. Procedures and/or mechanisms are in place and utilized to ensure that work planning is integrated at the individual maintenance or activity level, and work planning fully analyzes hazards and develops appropriate controls.

17. Procedures and/or mechanisms are in place and utilized which ensure that there is a process used to confirm that the facility or activity and the operational work force are in an adequate state of readiness prior to authorizing the performance of the work.

18. Procedures and/or mechanisms are in place and utilized which ensure that there is a process used to gain authorization to conduct operations.

19. Procedures and/or mechanisms are in place and utilized which ensure that safety requirements are integrated into work performance.

20. Procedures and/or mechanisms are in place and utilized which ensure that adequate performance measures and indicators, including safety performance measures are established for the work.

6. Workers actively participate in the work planning process.

APPROACH:

Record Review: Review documents and/or mechanisms that govern the work control process for planning, authorizing, and conducting work such as STD-101 “Integrated Work Control Process,” MCP-3562 “Hazard Identification, Analysis and Control for Operational Activities,” MCP-3571 “Independent Hazard Review,” PRD-5043 “Operational Safety Boards” and MCP-3480 “Environmental Aspect Evaluation and Maintenance.” Review should assess the adequacy of the documents to meet the requirements listed above and determine that the maintenance and work control process is effectively integrated into the facility/activity procedures. In particular, note the integration of hazard identification and controls, (i.e. chemical, electrical, radiological, waste streams, environmental) into the work planning process. Review the adequacy of the division of responsibilities as defined by the governing procedure, worker involvement in all aspects of the activity, and work authorization process. Controls for individual work items or activities such as Job Hazards Analysis (JHA), Radiation Work Permits (RWP), Hazard Profile Screen Checklist (HPSC), Work Control Forms (WCF), Confined Space Entry Permit, and operating procedures should also be evaluated.

NOTE: Although the ALARA Committee process will be reviewed by the Radiological Controls SME, a review of work control documents should be made to ensure the basic concepts of ALARA as well as any ALARA Committee recommendations are incorporated into the work control documentation.

Review the integration of subcontractor work control into the facility work control process. Evaluate the review of subcontractor work control documentation, the approval of the documentation, the authorization to conduct work and the oversight of subcontractor work in the facility.

Review the performance measures and performance indicators using the "INEEL Performance Measures and Trending Report," MCP-3521 "Trending Center," self -assessments conducted in accordance with MCP-8 "LMITCO Self-Assessment Process for Continuous Improvement," or the Facility Excellence Program PDD-1011 "Facility Excellence Program." Determine if these tools provide information that is truly a direct indicator of how safely the work is being performed.

Review the process used to prepare Authorization Agreements, MCP-3567 "Authorization Agreements with Authorization Basis List" and TEM-2 "Template for Authorization Agreements with Authorization Basis List." Review the Authorization Agreements for the Advanced Test Reactor (ATR) and the Radioactive Waste Management Complex (RWMC) to determine if they are adequate, that they demonstrate effective integration, and that proper procedures were followed to prepare, review, and approve them.

Interviews: Interview personnel responsible for preparing, authorizing, performing, and measuring the performance of the work. This should include personnel such as those responsible for preparing and maintaining work control documents, hazard identification and control documents, the Plan of the Day (POD), equipment status files, pre-job briefings, and the conduct of facility or activity operations. Interview personnel responsible for individual activity procedures and controls (e.g. JHAs, RWPs, HPSCs, WCFs, etc.) Verify adequate worker involvement at each step of the process. Interview personnel responsible for the development and implementation of the self-assessment program including individuals who participate in self-assessments. Interview those individuals responsible for development, maintenance, and approval of the Authorization Agreement. Interview members of the management team charged with adherence to the requirements listed within the Authorization Agreement.

Observations: Observe the actual authorization and performance of work activities. Observe a plan of the day or plan-of-the-week meeting. Attend an Operational Safety Board (OSB) meeting or an Independent Hazard Review Group (IHRG) meeting with field verification that hazard controls specified by the hazards control documents are being implemented. Team members should observe the development of a maintenance work package as well as the field execution of a maintenance work package. Observation should include the pre-job brief, authorization by the managers to proceed, command and control of the work, review of safety requirements, etc. Observe work hazard identification activities (e.g. JHAs, RWPs, etc.) and the application of MCP-3562 during an operational procedure walk-down and review. Observe worker involvement in these processes.

SUBJECT MATTER EXPERTS (SME)

OBJECTIVE:

SME.1 Within the radiological controls area the planning of work includes an integrated analysis of hazards, and development and specification of necessary controls. There is an adequate process for the authorization and control of work and a process for identifying opportunities for feedback and continuous improvement. Within the radiological controls subject area, line managers are responsible for safety; clear roles and responsibilities have been established; and there is a satisfactory level of competence. (CE II-2, CE II-3, CE II-4, CE II-5, CE II-6)

CRITERIA:

6. Procedures and/or mechanisms for the radiological control area require adequate planning of individual work items to ensure that hazards are analyzed and controls are identified.

7. Procedures and/or mechanisms for the radiological control area contain clear roles and responsibilities. The radiological controls subject area is effectively integrated with line support managers to ensure that line managers are responsible for safety.

8. Procedures and/or mechanisms for the radiological control area require controls to be implemented that these controls are effectively integrated, and readiness is confirmed prior to performing work. Workers are involved in planning of radiological controls.

9. Procedures and/or mechanisms for the radiological control area require that personnel who are assigned to the radiological controls subject area have a satisfactory level of competence.

10. Procedures and/or mechanisms for the radiological control area require that within the radiological control area feedback and continuous improvement results.

APPROACH:

Record Review: The INEEL Radiological Control Program is described by PRD-183 "Radiological Protection-INEL Radiological Control Manual." Associated MCPs are located in Manuals 15A, 15B, and 15C. Review Manuals 15A, 15B, & 15C and selected records that define the procedures and interactions required for the radiological controls at the facility or activity level. Assess the adequacy of the documents, such as Manual 15A, Chapter 3 "Conduct Of Radiological Work," to effectively integrate the radiological controls into the facility work control process. Review requirements of MCP-91 "ALARA Program and Implementation." Evaluate the program's success in reducing individual and collective radiation exposure of the worker. Review ALARA Committee documents such as ALARA reviews for radiological work, Radiological Performance Goals, and recommendations for exposure reduction. Review the

facility's success in maintaining exposure below established goals. (The inability to maintain radiation exposure at or below established goals may indicate a serious weakness in the hazards identification and control area). Evaluate if adequate consideration has been given to ALARA reviews and recommendations during the development of work control documents. Review work control documents noted in the Operations CRAD to ensure proper integration of radiological controls in the work control documentation. Review radiological work control documents to assess whether lessons learned have been effectively used within the radiological control area. Review training records of personnel in the Radiological Control organization and the site work force to determine if they meet competency standards listed in Chapter 6 of Manual 15A. Review the worker involvement in the ALARA processes.

Interviews: Interview personnel and responsible managers in the Radiological Control Organization to assess the establishment of clear roles and responsibilities and the understanding of the radiological controls support provided to line managers. Interview Rad-Con personnel to determine their understanding of the hazards identification and controls process and their input to this process. Interview personnel assigned to the Radiological Control Organization and the general site work force to assess the level of understanding and compliance with the ALARA program. Interview Rad-Con managers and technicians to determine their level of competency commensurate with assigned responsibilities. Interview members of the ALARA Committee to determine their understanding of their roles and responsibilities, as well as their competence, for being an ALARA Committee member. Interview the DOE-ID Rad-Con Manager, and facility line management to assess the establishment of clear roles and responsibilities, and effective interface with contractor activities.

Observations: Observe events such as the development of work control documents, development of a radiological hazards analysis such as a radiological work permit or job hazard analysis. Observe the review and approval process for radiological work control documents and individual work activities. Review the interactions between radiological control personnel and other facility personnel such as operations or maintenance during the execution of work activities. Attend any ALARA reviews or committee meetings. Observe work activities to ensure the controls specified by the hazards control documents are personnel of the being implemented and complied with.

OBJECTIVE:

SME.2 Within the configuration management subject area the planning and documentation of designs and modifications includes an integrated analysis of hazards, and development and specification of necessary controls. There is an adequate process for the authorization and control of design and a process for identifying opportunities for feedback and continuous improvement. Within the configuration management subject area, line managers are responsible for safety; clear roles and responsibilities have been established; and there is a satisfactory level of competence. (CE II-2, CE II-3, CE II-4, CE II-5, CE II-6)

CRITERIA:

4. Procedures and/or mechanisms for the configuration management subject area require adequate involvement of qualified individuals in the design process to ensure that hazards are analyzed and controls are established to mitigate or eliminate the hazards.

5. Procedures and/or mechanisms for the configuration management subject area contain clear roles and responsibilities. The configuration management subject area is effectively integrated with line support managers to ensure that line managers are responsible for safety.

6. Procedures and/or mechanisms for the configuration management subject area require controls to be implemented, that these controls are effectively integrated, and readiness is confirmed prior to performing work. Workers understand and are utilizing configuration management processes, where appropriate.

6. Procedures and/or mechanisms for the configuration management subject area require that personnel who are assigned to the configuration management subject area have a satisfactory level of competence.

7. Procedures and/or mechanisms for the configuration management subject area require that within the configuration management subject area feedback and continuous improvement results.

APPROACH:

Record Review: Review the INEEL Configuration Management Program described in PLN-485, "Configuration Management Project Plan," PRD-115, "Configuration Management" and STD-107, "Configuration Management Program." Review associated MCPs located in Manual 10A. Review MCP-2811, "Design and Engineering Change Control," MCP-3630, "Computer System Change Control," MCP-3572, "System Design Descriptions," MCP-3573, "Vendor Data Management" and MCP-2377, "Development, Assessment and Maintenance of Drawings," to determine the adequacy of the facility/activity level configuration management processes at the INEEL. Review training records of personnel in the configuration management subject area to

determine that they meet competency standards. Review the DOE directive that defines the DOE expectations for Configuration Management.

Interviews: Interview personnel and responsible managers in the configuration management subject area, both for the contractor and DOE. Interview line managers to assess the establishment of clear roles and responsibilities and the understanding of the configuration management support provided to line managers. Interview personnel assigned to the configuration management subject area to assess the level of competence.

Observations: Observe events such as the development of an Engineering Change Form (ECF), Computer System Change Form (CSCF), or Document Action Request (DAR) for a technical document. Observe as-building of fire protection and life safety systems. Observe development of the facility design recovery plan.

Appendix III

ID Manager Appointing Memorandum

United States Government **Department of Energy**

memorandum

Idaho Operations Office

Date: July 22, 1999

Subject: Appointment of Mr. Joseph Arango as Team Leader for the Idaho National Engineering and Environmental Laboratory Integrated Safety Management System Phase II Verification (OPE-ISM-99-XX)

To: J. Arango
Office of the Departmental Representative to the Defense Nuclear Facilities Safety Board
DOE-HQ, S-3.1, 6H-025/FORS

In accordance with the requirements of the Department of Energy (DOE) Acquisition Regulations (DEAR), Section 9.2.2.6 of the DOE Manual of Safety Management Functions, Responsibilities and Authorities (M411.1-1), and contracts associated with operation of the Idaho National Engineering and Environmental Laboratory (INEEL), you are selected to be the Team Leader for the Phase II Integrated Safety Management System (ISMS) Verification (ISMSV-II).

1.0 Description of Activity: The review will verify the adequacy of the implementation of the ISMS for operation of a selected set of INEEL facilities and activities managed and operated by Lockheed Martin Idaho Technologies Company (LMITCO) under DOE Contract DE-AC07-94ID13223. The review will include implementation of the DOE Idaho Operations Office (DOE-ID) responsibilities associated with the contract ISMS.

2.0 Background and History: Contracting Officer guidance on development of the Safety Management System Description Document and ISMS implementation was issued on April 2, 1998 and updated July 29, 1998. In response to the July 1998 direction, LMITCO submitted the proposed Safety Management System Description Document (PDD-1004, Revision 1) for approval on March 10, 1999, (Letter WJD-28-99) in accordance with the direction provided and the provisions of the DEAR. The ISMS Description Document (PDD-1004, Revision 2) was approved by the ID Manager on April 28, 1999 (Letter OPE-ISM-99-035) after successful completion of a Phase I ISMS Verification and successful incorporation of Verification Team comments. The ISMS Description Document and its approval letter are attached for your use. A copy of the Phase I ISMS Verification report is also available for your use while on-site.

The maturity of the ISMS varies among the individual facilities at INEEL. The INEEL ISMS Phase II Verifications (ISMSV-II) will be sequenced in groups of facilities, and are scheduled for completion between September 1999 and April 2000. This appointment memorandum is for you to lead a Phase II Verification Team for review of ISMS implementation at the first group of facilities to have implemented the described ISMS. An EH-2 Safety Management Evaluation is currently scheduled for May 2000 following the final ISMSV-II.

The INEEL has been working toward recognition in the DOE Voluntary Protection Program since October 1994. An independent contractor recently reviewed INEEL facilities and designated seven of the company's VPP units as “STAR Ready”. This is an interim level of recognition designed to sustain the contractor's VPP efforts, and to identify areas requiring additional attention prior to applying for sitewide VPP recognition. The remaining four units will be assessed to confirm their "STAR Ready" status in late July/early August, 1999. LMITCO anticipates the new contractor will submit an application for INEEL recognition in the DOE-VPP in May 2000 following the final ISMSV-II.

The INEEL facilities within the scope of this review include one hazard Category 1 facility (Advanced Test Reactor), two hazard Category 2 non-reactor nuclear facilities at the Radioactive Waste Management Complex, and one radiological facility (less than hazard Category 3 facility), the Waste Experimental Reduction Facility. All category 1 and 2 nuclear facilities have approved Authorization Agreements. LMITCO is currently updating safety basis documents as part of DOE Order 5480.23 implementation, and has submitted a General Safety Analysis Report to DOE-ID for approval.

The standards and requirements baseline for the INEEL ISMS is defined in a List A (laws and regulations) and List B (DOE Orders) developed per DEAR 970.5204-78.

3.0 Phase II ISMS Verification: You are appointed as the INEEL ISMSV-II Team Leader. You are to assemble and train the ISMSV-II Team, develop and approve a Review Plan, and conduct the review. The scope and special considerations of the review are discussed below.

4.0 Scope and Special Considerations for the Phase II ISMS Verification: The purpose of this review is to verify satisfactory implementation of the ISMS Description Document (PDD-1004, Revision 2) in selected facilities, and provide a recommendation to me concerning implementation of ISMS. Your report should delineate any areas in which implementation does not conform to the approved ISMS Description.

Some aspects of INEEL ISMS were reviewed as part of the recent accident investigation and results are documented in that report which should be reviewed by your Team prior to the ISMSV-II. Your review should not repeat previously identified deficiencies of that review, but should consider whether the ISMS has been implemented based on lessons learned in that review. Your team should also review the Phase I ISMS Verification report so that previously identified issues and strengths can be taken into account during the ISMSV-II. The following specific guidance is provided:

a. The scope of the ISMSV-II review includes the following INEEL Site Area/facilities and activities managed and operated by LMITCO under Contract DE-AC07-94ID13223 including the integration with the ID: Advanced Test Reactor (ATR), Radioactive Waste Management Complex (RWMC), Waste Experimental Reduction Facility (WERF), Idaho Research Center (IRC), and the Transportation Complex (Big Shop). Other INEEL Site Areas and facilities are excluded from the scope of this review.

b. The following areas should receive special emphasis on the review and are candidates for subject matter expert evaluation at one or more of the facilities during the review:

- Radiological Controls
- Configuration Management

c. Significant portions of the company level procedures supporting the ISMS have recently been revised. The review should assess the adequacy of the implementation of the key site-level ISMS documents at the individual facility and work process levels. I am particularly interested in verifying implementation of procedures for the Integrated Work Control Process, and revised procedures for hazard analysis and control.

5.0 DOE Implementation of ISMS: The scope of your review should include verifying that the responsibilities, activities, and processes for my staff have been implemented and integrated with the LMITCO ISMS. These responsibilities are defined in DOE-ID directives and guidance, and in the Idaho Operations Office Safety Management Functions, Responsibilities, and Authorities Manual (FRAM). The DOE-ID FRAM was approved by the DOE-ID Manager in August 1998, and was updated in February 1999.

6.0 Desired Deliverables from the Review: The Phase II ISMS Verification Team should document the review with a report written in accordance with the guidance of Appendix 7 to the ISMS Verification Team Leader's Handbook. The report should include the recommendation concerning implementation of ISMS, an assessment of the adequacy of the supporting program and process documents and implementation at the Site Area/facilities level, and, as appropriate, noteworthy practices and opportunities for improvement.

7.0 Prerequisite for Phase II ISMS Verification: The prerequisite for the review is that the INEEL ISMS Description Document be approved and implemented in the selected Site Area/facilities, or that implementation plans be in place with significant progress having been made.

8.0 Estimated date for Commencement: The ISMSV-II should commence approximately August 23, 1999 and complete in September 1999.

9.0 Point of contact: The point of contact for the Phase II ISMS Verification is Mr. Roger Wilbur. Copies of all the documentation and reports discussed above are available and will provide additional information to assist you in preparing for and conducting the verification.

/s/

Beverly A. Cook
Manager

Attachment

cc w/o att:

C. Huntoon, DOE-HQ, EM-1, 5A-014/FORS
W. D. Magwood, IV, DOE-HQ, NE-1, 5A-143/FORS
J. M. Wilcynski, DOE-HQ, FI-1, 5A-115/FORS
D. M. Michaels, DOE-HQ, EH-1, 7A-097/FORS
M. B. Whitaker, Jr., DOE-HQ, S-3.1, 6H-025/FORS
T. A. Wyka, DOE-HQ, S-3.1, 6H-025/FORS

Department of Energy

Idaho Operations Office
850 Energy Drive
Idaho Falls, Idaho 83401-1563

April 28, 1999

W. John Denson, President
Lockheed Martin Idaho Technologies Company
P. O. Box 1625, MS 3898
Idaho Falls, ID 83415

SUBJECT: Approval of the Revised Program Description Document for Idaho National Engineering and Environmental Laboratory (INEEL) Integrated Safety Management System (OPE-ISM-99-035)

REFERENCE: Letter, W. John Denson to W. Bergholz, Transmittal of Revised INEEL Integrated Safety Management System Description Document, dated April 22,1999

Dear Mr. Denson:

In accordance with DEAR 48 CFR 970.5204 and the Department of Energy (DOE) Functions, Responsibilities, and Authorities Manual, DOE has completed its review of the Idaho National Engineering and Environmental Laboratory (INEEL) Integrated Safety Management System, Program Description Document. Revision 2 of the document, transmitted in the reference letter, satisfactorily addressed and incorporated the Phase I Verification Team comments and is therefore approved. The Department of Energy-Idaho Operations Office endorses your Phase II implementation efforts, and offers support in any areas requiring federal input or assistance.

If you have any questions regarding this approval, please contact Roger Wilbur at (208) 526-3508 or Carol Henning at (208) 526-8042.

Sincerely,

/s/

Warren E. Bergholz, Jr.
Acting Manager

cc: H. T. Conner, Jr., LMITCO, MS 3898
J. D. Fleischman-Gay, LMITCO, MS 2503
W. W. Gay, III, LMITCO, MS 4143
W. H. Sullivan, LMITCO, MS 3960

Appendix IV

Acronyms

Acronyms

AA	Authorization Agreement
ATR	Advanced Test Reactor
BIO	Basis for Interim Operations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COOP	Conduct of Operations
CRAD	Criteria and Review Approach Document
D&D	Deactivation and Decommissioning
DEAR	DOE Acquisition Regulations
DNFSB	Defense Nuclear Facilities Safety Board
DOE	Department of Energy
DP	Office of Defense Programs
EM	Office of Environmental Management
EPA	Environmental Protection Agency
EPHA	Emergency Preparedness Hazards Analysis
ER	Environmental Restoration
EWP	Enhanced Work Planning
FAR	Federal Acquisition Regulations
FHA	Fire Hazards Analysis
FR	Facility Representative
FRAM	Functions, Responsibilities and Authorities Manual
HASP	Health and Safety Plan
HAZ	Hazards Identification and Standards Selection
HEU	Highly Enriched Uranium
HLW	High Level Waste
ID	DOE Idaho Operations Office
INEEL	Idaho National Engineering and Environmental Laboratory
IRC	Idaho Research Center
ISMS	Integrated Safety Management System
JCO	Justification for Continued Operations
LMITCO	Lockheed Martin Idaho Technologies Company
MG	Management
NE	Office of Nuclear Energy, Science, and Technology
NEPA	National Environmental Policy Act
NRC	Nuclear Regulatory Commission
OP	Operations and SME
ORR	Operational Readiness Review
OSRs	Operational Safety Requirements
PAAA	Price Anderson Amendments Act
POD	Plan of the Day
RA	Readiness Assessment
RCRA	Resource Conservation and Recovery Act
RP	Review Plan
RWMC	Radioactive Waste Management Complex
RWP	Radiological Work Permit
SAR	Safety Analysis Report
SER	Safety Evaluation Report
SME	Subject Matter Experts
TRU	Transuranic

TSA	Technical Safety Appraisal
TSR	Technical Safety Requirements
UCNI	Unclassified Controlled Nuclear Information
USQD	Unreviewed Safety Question Determinations
WERF	Waste Experimental Reduction Facility